The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. XXIX.*

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SECTION II.

PROSPECTING FOR MINERALS—BORING.

III.—THE BORING OPERATION.

REMOVAL OF HINDRANCES WHICH OCCUR OR ORIGINATE DURING THE BORING.

The insertion of a lost lining is effected in general in the same manner as a permanent lining, with the exception that the uppermost tube must be attached to a set of rods whilst it is being lowered into position. The upward edge of the lining is bent outwards somewhat, so as to cause sufficient friction or pressure against the side of the bore hole to support it when lowered into its position. Suppose we have 30 yards length of lost lining to be inserted at a depth of 120 yards; the separate tubes are added at the top, and rivetted together as the set is being lowered, until the last 5 ft. or 6 ft. just project above the top of the guiding bore tube, when the lining is attached to rods (perhaps best by means of the rivetting block or piston previously described) and lowered to its place. The length of the rods in this case will evidently be about 90 yards.

For lowering lost lining Herr Kind has devised and used the instrument we will now describe. This consists of two arms, about 2 ft. long, 2 in. broad, and ½ in. thick, hinged together; one of the arms is bent somewhat, and prolonged upwards, terminating in a screw, by means of which it is attached to a set of rods. From four to six pins, about 1½ in. long and ½ in. diameter, projecting outwards and upwards, are attached to the outside of each arm. Several holes to correspond are bored in the uppermost tube of the lining, and the instrument is introduced within the top of the lining, the arms being opened out the pins pass through the holes in the tube. A short hinged cross piece is driven between the lower part of the two arms, holding them apart, so that the pins are held fast in the holes in the lining. One end of the short cross piece is formed into an eye, to which the end of the winding rope is attached. In this manner the lining is lowered into its place, and the winding rope is drawn sufficiently tight to twist the cross piece from its horizontal into a vertical position; the rods being then slightly lowered, the pins come out of the holes, and the two arms can then readily close, when the instrument can be raised to the surface.

A very similar apparatus, devised and used by Von Rost, differs chiefly from Kind's in that the cross bridge has a hole through the centre, which is tapped to receive a left-handed screw. This screw is formed on a prolongation of the main rods, so that when they are rotated the cross piece is either raised or lowered, in the first case wedging tight the two side arms against the inside of the lining, which can thus be held securely, there being one or two pins in the arms, and corresponding holes in the lining, as in Kind's design; in the second case drawing them together so that they can be raised.

Herr J. A. Von Bruckmann has designed a highly simple and effective method for lowering lost lining into a bore hole. This consists of a horizontal cylindrical block of wood, which itself screws on the end of the lowest rod; it is turned somewhat conical on its outer edge, so as to fit the shoe of the lining. Along the line of two diameters (at right angles to each other) four triangular notches, each about one-fourth to one-third of the diameter in length are cut. The lowest rod should, of course, be longer than the set of lost lining, so that the top screwed end projects above the lining. When the lining has been thus lowered to its proper position the rods are unscrewed and withdrawn, and a centre (wood) borer is lowered to the wooden block, and the hole in the centre is gradually enlarged until it reaches the triangular notches, when the wooden block suddenly falls in four pieces, which rise to the surface of the water in the bore hole, and are easily extracted. When lowering the wooden lining tubes in the bore hole at Elmen, Zobel made use of an apparatus somewhat similar in principle to that used by Von Rost. The lowest rod, which is screwed to the ordinary boring rods, terminates at the lower end in a tolerably long screw spindle, which passes through a short cross piece, which has a tapped hole in the centre to correspond. At the two ends of this cross piece two links are attached, and from the links two arms are hinged, which terminate at the lower end in claw-shaped projections (projecting outwards). Both arms are embraced by a conical ring, which is attached to the end of the rod. When the rod is rotated to the left the ring is raised, and the two arms are drawn together; on the contrary, when the rods are rotated to the right the arms are forced apart. In the lowest tube two diametrically opposite pieces, or staves, of wood are left out, and in the slits which are thus formed the arms pass when they are forced apart, so that the whole length of lining rests upon the projections at the end of the arm. When it is required to release the arms, the rod is rotated to the left, and the arms being drawn together they can be raised

The "half-moon" apparatus of Von Secendorff can only be used in small holes. The lowest rod has a slot at its lower end, in which a grip can move, being centred on a bolt passing through the rod where it is slotted. One side of the grip is much heavier than the other, so that when it is not otherwise held it remains in a vertical position, in which position it can be passed through the lining. When the weight of the lining rests on the grip it holds it in a horizontal position, so that care must be taken in lowering it that the weight is not taken off, otherwise it may upset, and leave the lining without any support whatever. In order to prevent this an eye is formed in the heavy side of the catch, and a piece of string attached to it (a short piece of thinner string is attached directly to the eye, and the stronger piece which goes to the surface to this), the string, which is kept tight during the lowering of the lining, is gradually lengthened as the lowering proceeds. When the lining has been lowered into position the string is suddenly drawn tight, breaking it just above the eye, so that when the rods are lowered sufficiently the grips tilt into a vertical position, and the apparatus can be drawn to the surface.

We shall see a little further on that the same instruments which are used for withdrawing the lining can be used for the lowering of lost linings. It may sometimes be necessary to ram down a lost lining. When this is expected, the upper tube is generally strengthened by rivetting an iron ring or hoop to its upper end; indeed, it is generally advisable to do this in any case, the ring being fastened on the outside. For ramming Herr Kind uses a cylinder of wood, the lower longer portion being somewhat less in diameter than the inside diameter of the lining, which thus serves as a guide to it. The upper portion projects slightly beyond the ring, so that when the cylinder is raised, and allowed to fall, the projection strikes on the upper edge of the lining and the ring, by which means the lining is forced down, when the bore hole has been sufficiently widened below the shoe of the lining.

It often occurs during boring operations that it is necessary to raise the lining either partially or completely to the surface. In such a case the lifting apparatus should never be fastened to the lining in its upper part, as such might lead to a rupture of the lining, but near and if possible below its lower end. The best apparatus for this purpose is decidedly the rivetting block, or piston, used by Herr Kind, as we have previously described, except that instead of being 6 in. it is from 3 to 4 ft. in height, and the wedge which is inserted between the two halves is of oak. A very doubtful method is that used by Glenck, in attaching a sack of sand to one of the rods just above the collar, so that when the rod has been lowered to the place where it is wished to lay hold of the lining, and is slightly raised, the sack bulges out or swells against the side of the lining, until it is so tight that the rod cannot be raised further without raising the lining, and in this manner lengths of from 70 to 80 yards of lining have been withdrawn. The catch pear of Herr Glenck is devised on the same principle. It consists of a pear-shaped block of oak, about 2 ft. long, attached to the lowest rod, its diameter in the widest part being but slightly less than that of the inside of the lining. This is lowered to the lowest of the lining tubes, and large-grained sand is thrown into the bore hole, till it stands about 4 to 6 ft. above the catch pear, and on attempting to raise the latter it presses the sand so tight against the side of the lining that the latter is raised. When the lining is a lost lining it is usual to slip a long cylinder over the lowest rod to which the catch pear is attached, the cylinder being considerably smaller in diameter than the lining, and resting on the catch pear, which thus forms, or stops up, the bottom of the cylinder, the cylinder being filled with sand before the apparatus is lowered into the bore hole. The cylinder is attached at its upper end to a rope, which is drawn up when the apparatus has been lowered into position, allowing the sand to fall out into the bore hole round the catch pear. The lining lifter, devised by Herr Von Alberti, consists of a a wooden truncated cone, which is fixed to the bottom end of the lowest rod, with the widest end downwards. At the same time a cylinder, composed of thin wooden staves, is lowered by means of a rope, the bottom ends of the staves having wedge-shaped pieces of wood attached on the inner side, and which fits against the surface of the cone. When the apparatus has been lowered into position the rope to which the cylinder is attached is slackened, and the latter falls, and rests upon the cone. When the rods are raised the cone, pressing against the wedge-shaped pieces of wood attached to the inside of the lower end of the cylinder, forces the staves outwards against the lining, causing so much friction that the lining is raised with the rest of the apparatus. If the lining is too firmly fixed the rods, and consequently the cone, is lowered, and at the same time the rope attached to the cylinder is pulled tight, so that if the cylinder be raised before or at the same time, so as to prevent its coming again into contact with the cone, the whole of the apparatus can be drawn to the surface within the lining. Dégoussée's piston borer, used for enlarging a bore hole, is often used, as we have previously remarked, as a lining lifter.

Kind's after borer, devised for enlarging a bore hole immediately below the lining, is also suitable for raising linings. Kind also makes use of two other instruments for raising the lining from a bore hole. The first of these consists of a long square iron bar, the upper end terminating in a screw, by which it is attached to the rods, the lower end forming a pear-shaped wedge. Over this bar a loose ring can be moved up and down, to which are hinged four springs, or arms, the lower ends of which are filed in a ratchet shape. Just above the pear-shaped swelling a second ring is firmly fixed to the bar, and embraces the lower ends of the spring arms. When the instrument is lowered beneath the lining, and then raised again, the pear-shaped swelling acts as a wedge, and forces the arms apart against the bottom edge of the lining, which is thus raised with the rest. If the lining is too tight it is simply necessary to first lower the bar, which allows of the four arms falling together, so that the instrument can be raised to the surface. The movable ring to which the arms are hinged requires to be suspended from a special rope.

The second instrument is constructed on an exactly similar principle, and consists of a massive iron wedge, which has two or three vertical grooves on its outer surface, on which two or three arms can slide, the lower ends of the arms being bent upwards. The upper ends of the arms are hinged in a swelling on the square bar, in which the wedge terminates, and which screws into the shaft rods. To the upper end of the wedge a hoop is rivetted, and from this hoop two small iron rods pass up to a second hoop, or rather collar, which is moveable up and down on the square bar or rod, which screws into the shaft rods, and from this collar two ropes pass upwards, being attached to the sludger rope, so that when these are raised the wedge is also raised. When the apparatus has been lowered into its proper position the wedge is raised by pulling the sludger rope, and this forces the arms apart, with their turned up ends beneath the lining, which is thus caught when the rods are raised, and raised with them. Should the lining be too fast, all that is necessary is to lower the wedge, and the apparatus can then be withdrawn from the bore hole.

The surface operations are the same whatever may be the description of instrument with which the lining is raised. When the lining has been so far raised that the uppermost tube or sets is about 3 ft. above the mouth of the guiding bore tube the wooden tube clamp is attached to its upper end, so that it can be slung from a rope. In order to prevent the rivets when they are knocked out from falling to the bottom of the bore hole a light wicker basket is suspended below the junction of the two tubes, so that when the rivet heads are knocked off on the outside and the rivets punched inwards they fall into this basket. When this has been effected the rope attached to the tube clamp is drawn up, and the now disengaged set of tubes with it. An iron clamp or fork is next attached to the shaft rods just above the projecting end of the lining, so that the shaft rods can be supported whilst the upper length of rods are being unscrewed and removed, and the disengaged set of tubes being drawn first over the rods and laid aside. After this the end of the swivel is again screwed on to the shaft rods, and the further raising of the lining proceeded with. The point requiring most attention is the proper supporting of the lining and rods, to prevent their falling back again into the bore hole.

It may happen that owing to the original diameter with which a bore hole has been commenced being too small, or the unadvisability of enlarging beneath the lining of a bore hole, that it may be required to enlarge a bore hole from the surface. This is done with the enlarging borers, which we have already described. The boring is carried on in the usual manner, except that the lift or fall of the borer is much less, and the precaution should be taken of fastening an hand brace or clamp on the rods, so as to catch the rods should they fall, either from coming too suddenly into an enlargement in the bore hole or other similar reason. The operation should be carried on as rapidly and connectedly as possible, so as to be less liable to hindrances. One of the most troublesome things connected with such enlarging operations is the necessity of repeatedly sludging from the extreme depth to which the bore hole has been carried, since, as we have previously remarked, the advantage of the stone catches, &c., is more than doubtful.

Ferdinand Von Alberti when boring at Wilhelmshall, near Schwenningen, in Wurtemberg, in 1824, made use of the following device for stopping the bore up at about one-half its depth, thus rendering it necessary to perform the sludging only from one-half the depth. This stopping consisted of a truncated wooden wedge or cone with the broader face, which is about ½ in. to ¾ in. less in diameter than the bore hole placed downwards. This cone has a hole in its upper end, which is tapped so as to receive a left handed screw, which is formed on the lowest of the shaft rods. Over this cone a hollow cylinder formed of wooden staves is passed and fastened at the upper and lower ends with thin wire to connect the staves together; the cylinder is lagged with hemp or strips of leather; the diameter of the cylinder, however, must not be increased thereby to that of the bore hole. On the top of the cylinder a leathern disc about 1 inch larger in diameter than the bore hole is attached, being stiffened with iron rings. The leathern strips which surround the cylinder are nailed on to the wooden cone, so that when the latter is lowered by means of the rods the cylinder is drawn down with it and with the leathern disc turned up all round at the edge. When the instrument has reached the position in the bore hole where it is wished to be stopped up the wooden cone is drawn up, forcing the cylinder tight against the sides of the bore hole, and as all the rest of the rods have right handed screws the rods are easily unscrewed from the wooden cone and raised to the surface.

The enlarging of a bore hole from the surface, however, is always to be avoided when possible, since it is liable to so many hindrances and chances of non-success, besides being nearly as costly as the sinking of a fresh bore hole, so that the advice cannot be too often enforced to commence the bore hole with as large a diameter as possible compatible with the circumstances. The most scientific and correct method of sinking a bore hole is to proceed with the insertion of the lining at the same time.

When a bore hole has been continued below a lining of a smaller diameter, and it is necessary to line the lower part, it appears most desirable to enlarge the lower part to the same diameter as the upper, and to lengthen and force the original lining below the last portion of quick strata. Before commencing to enlarge the bore hole it is advisable if the lining rests on the projecting ledge at the bottom of the enlarged portion to raise the lining 4 or 5 ft. if it does not fit too tight in the bore hole, so that in commencing with the after borer it is not necessary to have to use an after borer for boring upwards to remove the ledge just below the foot of the lining, which can thus be taken off at the commencement of enlarging the bore hole. When this enlargement is completed the lining is raised and suspended from a tube clamp, so that it sufficiently projects at the surface to attach another set of lining tubes.

The enlarging of a bore hole or lining is effected by Kind's combined borer and after borer, or better still, by the ordinary chisel borer with Kind's wing borer inserted between it and the upper rods; the lining is lengthened and gradually lowered as the boring proceeds. This operation of enlarging a bore hole and lowering of the lining as the boring proceeds is, perhaps, the most difficult in the art of boring. Herr Kind when boring at Luxembourg, and Von Seckendorff when boring at Schöningen, in the Duchy of Brunswick, only carried the boring so far in advance at a time as was necessary for the addition of an ordinary length of lining. This method certainly occupies more time than when a considerable length is bored in advance at a time before continuing the lowering of the lining, but in this latter case the lining, which should act as a guide for the blocks on the free falling piece to keep it perfectly vertical during its descent is wanting, and the cap of the free falling piece may also be below the lining, and consequently exposed to the disadvantages we have previously mentioned. The absence of a lining to act as a guide may not be of such moment where the bore hole is being carried down of a smaller diameter, so that the boring is only effected with a chisel, but where the use of wing and after borers is necessary the boring is very liable to deviate from the vertical and entail corresponding difficulties. The use of after cutters or borers is also accompanied with several disadvantages. The moveable after cutters do not offer that rigid resistance to a blow which a solid chisel borer does, and consequently part of the force of the blow is lost in vibrations. The advantages which may be obtained from accommodating the lift of the borer to suit the character of the different strata passed through cannot be obtained with the use of after borers, where the after cutters may be working in harder strata than the borer and *vice versa*; and again, and, perhaps, the most important of all, is the fact that the resistance of the sides of the bore hole has to be overcome twice, and it must be borne in mind that the resistance offered by the periphery of a bore hole is perhaps the greatest of all the resistance a borer has to overcome.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergrath, Dr. VON GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

GEOLOGICAL SOCIETY OF LONDON.

June 6—Prof. P. MARTIN DUNCAN, M.B., F.R.S. (President), in the chair.

The Rev. Charles Leach, Vincent street, Birmingham; Wm. May, Orpington House, Kent; J. W. Myers, Westbury-road, Westbourne-square; and John Fletcher Pagen, mining engineer, Chapel Heys, Bodmin, Cornwall, were elected Fellows of the society.——Stephenson Clarke, Croydon Lodge, Croydon, Surrey; Wm. Hunter, Sandhoe, near Hexham; and Rev. W. Roberts, St. Leonard's terrace, Chelsea, were proposed as Fellows of the society.——Geo Alexander Gibson, M.B., D.Sc., Lauder-road, Grange, Edinburgh; Henry P. Gurney, M.A., clerk, Fellow of Clare College, Cambridge; John Higson, mining engineer, Albert-square, Manchester; and Francis Stephenson, M.Inst. C.E., chief assistant engineer, London and North-Western Railway, Euston Station, N.W., will be balloted for as Fellows of the society.

The following communications were read:—

1.—"On the Rank and Affinities in the Reptilian Class of the *Mosasauridæ*, Gervais." By Prof. R. Owen, C.B., F.R.S., F.G.S.

2.—"Note on the Occurrence of the Remains of *Hyænarctos* in the Red Crag of Suffolk." By Prof. William Henry Flower, F.R.S. F.G.S.

3.—"On the Remains of *Hypsodon, Portheus, and Ichthyodectes* from British Cretaceous Strata, with descriptions of new species." By E. Tulley Newton, F.G.S., of H.M. Geological Survey.

4.—"On the Precarboniferous Rocks of Charnwood Forest." Part I. By Rev. E. Hill, M.A., F.G.S., and Rev. T. G. Bonney, M.A., F.G.S.

The authors described a mass of slates, grits, and volcanic breccias accompanied by some knolls and dykes of syenite, spread over a space of about 50 square miles. They showed that the patches marked on the Survey Map as greenstone of Bardon, Birchwood, and Buck Hill, except a very small portion of the latter, are really altered rock; that the syenite knoll of Bawdon Castle carries a mass of breccia in its centre; and that the area of the syenite in Bradgate House Woods must be enlarged.

Several writers have noticed that part of the porphyritic region of the north-west corner is altered rock. The authors showed that there is in it no igneous rock at all, and that the same is the case with every one of the smaller patches marked as porphyry on the Survey Map. All are volcanic breccias, ashes, or agglomerates, some of enormous size. The extent to which volcanic materials enter into the rocks of the district is remarkable.

The authors endeavoured to correlate the stratified rocks, and adduced evidence to prove that the pebble and ash-beds of Forest Gate, the grit and pebble-beds of the Hanging Rocks, the similar beds in the grounds of Mr. A. Ellis, at Swithland, and the quartzites of Bradgate Stable Quarry, Groby Pool, and Steward's Hay Spring, form one horizon; the slate breccias of Blores Hill, Bradgate, Ulverscroft Mill, Markfield, Bardon, and High Towers, a second; the coarse ash-beds of Bensciiff, Chitterman Hill, Timberwood Hill, and the Monastery, a third; and the quartzose rocks of Charley Wood, Charley, the Old Reservoir, and Blackbrook, a fourth.

Hence they showed that the beds are considerably dislocated near the syenites, which removes the main objection which previous writers have urged against these being intrusive; and they described the evidence they have obtained as to this being their real nature. This evidence included the description of actual contacts of igneous and sedimentary rock seen at two points in the wood south of Bradgate House, and at a third in Bradgate Park.

They propose, in a continuation of the paper, to touch upon the faults, and to describe in greater detail the microscopic structure of the rocks.

Prof. RAMSAY said that though it was 30 years since he saw the country described in the paper, and 20 years since it was mapped, he knew that the officers of the survey were quite convinced that a large proportion of the so-called igneous rocks were only igneous in the sense of extreme metamorphism.

Rev. T. G. BONNEY said that in this district in most cases the metamorphism was not extreme. There is no porphyry, and what felspar is present is detrital.

Mr. HICKS was surprised to find so great a resemblance between the rock specimens now exhibited and those he had recently brought before the society from the pre-Cambrian rocks of St. David's. He would draw particular attention to the conglomerate shown, as it contained distinct pebbles of schists and indurated shales, derived primarily from rocks in a state of metamorphism. That these pebbles were in this state previous to being cemented together to form the conglomerate was clear from the fact that the pebbles still retain their distinct outline, and the matrix is not apparently much altered. It is clear also that these masses could not have been derived from the Cambrian or Lower Silurian rocks, as all evidence so far obtained in regard to the physical conditions of the Cambrian and Lower Silurian epochs in Western Europe goes to show that these rocks were not elevated out of the horizontal position until the close of the Lower Silurian, and hence that they could not have been indurated sufficiently to yield pebbles of this nature. He felt convinced that some at least of these rocks would prove to be of pre-Cambrian age, and would have to be correlated with those he had recently described under the names "Dimetian" and "Pebidian."

Prof. RAMSAY altogether denied the absence of pebbles in the rocks referred to by Mr. Hicks. There were plenty of them, both of Cambrian and of Silurian age.

The next meeting of the society will be held on Wednesday, June 20, when the following communications will be read:—

1.—"The Action of Coast Ice on an Oscillating Area." By Prof. John Milne, F.G.S.

2.—"On the Superficial Geology of British Columbia." By G. M. Dawson, F.G.S.

3.—"On the Chronological Classification of the Granitic Rocks of Ireland." By G. H. Kinahan: communicated by Prof. Ramsay, F.R.S., V.P.G.S.

4.—"The Cambrian Rocks of South-East Ireland." By G. H. Kinahan: communicated by Prof. Ramsay, F.R.S., V.P.G.S.

5.—"On Points of Similarity between Zeolitic and Siliceous Incrustations of recent formation by Thermal Springs, and those observed in Amygdaloid and other altered Volvanic Rocks." By M. A. Daubrée, F.M.G.S.

6.—"On an hitherto Unnoticed Circumstance affecting the Piling Up of Volcanic Cones." By R. Mallet, F.R.S., F.G.S.

7.—"The Steppes of Southern Russia." By T. Belt, F.G.S.

8.—"Description of the Fossil Organic Remains of Bendigo." By C. A. Zachariæ: communicated by the President.

9.—"Glacial Drift in the North-Eastern Carpathians." By. R. L. Jack, F.G.S., and J. Horne, F.G.S.

10.—"Notes on some recent Discoveries of Copper Ore in Nova Scotia." By E. Gilpin, M.A.

11.—"On Terminal Curvature in the South-Western Counties." By W. A. E. Usher, F.G.S.

12.—"Discovery of Silurian Beds in Teesdale." By W. Gunn, F.G.S., and C. T. Clough, B.A., F.G.S.

13.—"The Exploration of the Ossiferous Deposit at Windy Knoll, Castleton, Derbyshire." By Rooke Pennington, LL.B., F.G.S., and Prof. W. Boyd Dawkins, M.A., F.R.S., F.G.S.: by the latter.

14.—"On a number of New Sections around the Estuary of the Dee which exhibit Phenomena having an important bearing on the Origin of Boulder Clay and the Sequence of Glacial Events." By D. Mackintosh, F.G.S.

15.—"The Glacial Period." By J. F. Campbell, F.G.S.

16.—"The Chronological Value of the Pleistocene Deposits of Devon." By W. A. E. Usher, F.G.S.

17.—"On the Triassic Rocks of the South-Western Counties." Part II. By W. A. E. Usher. F.G.S.

18.—"On the Cretaceous Dentaliadæ." By J. S. Gardner, F.G.S.

SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE INSTITUTE OF MINING ENGINEERS.

A largely attended meeting of members of this Institute was held at the Midland Institute, Birmingham, on the 7th inst.,

Mr. T. PARTON, F.G.S., President, in the chair.

Mr. ALEXANDER SMITH (the secretary) read the minutes of the last general and council meetings, which were confirmed, and explained that arrangements were proceeding for the excursions of the year. The first to be made to North Wales about the end of this month, and the second about the end of July to the coal fields of Westphalia.

Mr. WM. BLAKEMORE, F.G.S., then read his second paper, entitled:

REMARKS ON THE FAULTS OF THE SOUTH STAFFORDSHIRE COAL FIELD.

Since the reading of my previous paper on this subject, two months ago, I have been able to acquire some interesting and valuable information arising from the proofs recently made by borings, sinkings, and headings at various points along the western boundary fault. For this reason it will be best to conclude our remarks upon this important fault before proceeding to consider those in the interior of the coal field, and I will now give you an account of all the explorations which have been made along this fault line up to the present date, so far as I have been able to gather information by experience and enquiry. In No. 3 pit at the Himley Colliery, belonging to Earl Dudley, at the depth of 130 yards a head was driven out of the Thick coal a distance of 25 yards into the red ground, and it will be in the recollection of some of the members present that when we inspected the headway a few years ago, in company with several geologists, we were of an uniform opinion that the red ground at the back of the head was the Permian rock, and lay at an angle of about 45°, and the correctness of this opinion has not been disproved by any subsequent operations. Proceeding northward, the next point at which the fault has been come in contact with was near the Fighting Cocks, Goldthorne Hill, Wolverhampton, where about the year 1840 Mr. Wm. Spruce in sinking a shaft cut through all the regular measures worked in that locality (including new mine coal, fire-clay coal, bottom coal, gubbin, and and balls, ironstone, and blue-flats) in an almost vertical position; they pitching headlong to the west. Here the proof was a very peculiar one, as the shaft passed through the measures twice, owing to the singular nature of the disturbance; first they were cut through in their natural horizontal position, then pitching down vertically for a distance they again assumed a more even position, crossing the shaft back again, and dipping towards the west.

Nearly 30 years ago a shaft was sunk in the permians on the property of the Waterworks Company, Wolverhampton, to the depth of 100 yards for the purpose of finding a supply of water. This shaft is about half a mile west of . I am enabled to submit to you a section of the sinking, by which you will see that the strata continue to dip in a westerly direction. I may add that I wish the result of this sinking had been more satisfactory both in a geological and a commercial sense.

At Steelhouse Lane, about 1½ mile further north, in the year 1855 I drove a head from the bare-flats ironstone at a depth of 70 yards from the surface, a distance of 60 yards in a westerly direction, and faced the fault—red sandstone and marl. By the dipping of the measures underneath this "red" ground I was convinced of the probable existence of the coal measures still further to the west.

In Mr. Phillips' land, Wood End, near Wednesfield, recently a shaft has been sunk nearly on the edge of the fault to a depth of 110 yards. After passing through upwards of 100 yards of very irregular strata, consisting of red sandstone, red and grey marl, blue binds, green rock, rocky marl, &c., two thin seams of coal, 13 in. and 30 in. thick respectively, were met with, and these coals dip to the west, at the same angle as the superincumbent strata.

In the Ashmore Park Colliery, near Essington, at a depth of 40 yards, a head has been driven in the brooch coal towards the west. In this head the overlying measures pitched down, cut out the brooch coal, and continued to dip at a very acute angle under the permians. Four feet of marl was driven through, and the permian rock penetrated. This proof, which is a most important one, shows the line of the permians to be nearly 500 yards further east than is indicated on the Ordnance Survey; and, notwithstanding the fact that this must be regarded as an encroachment to that extent upon the supposed limits of the coal field, there is strong evidence that valuable coal seams will be found over this line of severance, for at the old Coppice Colliery, Cheslyn Hay, this same fault, as we venture to think, was worked up to by Mr. Hawkins some years ago. But recently he has sunk a shaft on the western side of the throw to a depth of 230 yards, in which 80 yards of marl and red sandstone were passed through, and some excellent seams of coal free from water have been found lying at an angle of about 7°. This shows the fault to have been a downthrow to the west of about 140 yards. A head has been driven a distance of nearly 300 yards from the shaft due west without any alteration in the nature of the strata, or the least indication of a disturbance. The 8-ft. coal is equal, if not superior, to any that has been worked on the rise side of the fault. Although it is apparent that from this point northward denudation has been at work and washed away the upper coal measures and the permians, and filled up their place with extensive keuper and bunter beds, yet it is satisfactory to know that as far as the work of proof as yet proceeded in a west and north-westerly direction the lower coal measures having been found intact (exception the first sinking at Fair Oak), and a rich mineral wealth developed. Nor have any of the important trial holes either at West Cannock, Cannock and Huntington, or Fair Oak met with anything which would indicate the proximity of the fault, or the termination of the coal measures.

It is certainly strange that the enterprising Fair Oak Colliery Company, after the expenditure of upwards of 100,000*l.*, and sinking a depth of about 320 yards, and contending with an enormous quantity of water, should have failed to discover coal in their first sinking; but it will be gratifying alike to this Institute and to the company to know that in their new shaft they have been successful in finding the object of their research. Several coal seams have been sunk through within 100 yards from the surface, although this shaft is only a short distance from the former one. At a depth of 98 yards the shallow coal of good quality, and 3 yards in thickness, was passed through, and within the past few days the deep coal has been found. With reference to the latter seam, a peculiarity exists which is a new feature in the Cannock Chase district—that is the fact of it being scarcely 4 ft. thick. About 7 yards above this there is another coal upwards of 3 ft. thick, which some may be inclined to think is a splitting up of the deep coal, but which the writer regards differently, believing it to be the roof coal which runs generally above the deep coal in the northern part of the coal field, but which has thickened in this locality. We sincerely hope that as the company's mining operations extend in a westerly direction the deep coal will be found of its ordinary thickness, and that the managers and company will be amply rewarded for their pluck and enterprise after such a large expenditure of capital. Through the kindness of Mr. Molineux I have been permitted to make an inspection of the sinkings, and also to procure a section. There is a great similarity between the trial holes at Cannock and Huntington and Fair Oak, and it is much easier to correlate the sections of these two places than of Cannock and Huntington and West Cannock, although the latter is much nearer in situation to Cannock and Huntington than the former. This would seem to indicate that the two former trial holes are in the same angle, and that the mines found in the one place will be found in the other. The first point of resemblance is the nature and thickness of the red ground and pebble beds overlying the coal measures. At Cannock and Huntington the thickness of these deposits is 124 yards, and at Fair Oak 125 yards. From the bottom of the red ground, through the first coal, is at the former place 21 yards, and at the latter 15 yards, whilst the two coals are of nearly equal thickness—about 5 ft. 6 in., with a similar roof of bines in each instance. Within a distance of 20 yards below there are in each hole two thin seams of coal, also of similar thickness, the nature of the ground above and below these coals coals corresponding, and it is highly probable that if the boring at Cannock and Huntington had been carried a few yards lower another coal would have been found about 5 ft. thick, similar to the one at the bottom of the Fair Oak trial hole; and, although there are here unmistakeable signs of extensive denudation, the result of these numerous explorations on the western border of the coal field tends to show that the writer has rather under-estimated than over-stated the increased quantity of coal secured to the district by recent proofs in this direction, and there is at present, in the absence of further proofs, no telling how far the coal measures may run to the west, and we shall watch with more than usual interest the operations at Cannock and Huntington, as they will have an important bearing on this part of the coal field. In the light of these researches little encouragement is found for that theory so often reiterated that our coal field lies like an isolated cliff around which the fierce ravages of denudation have strewn on every side the debris of neighbouring rocks and drift, entirely sweeping away the coal measures and permians from our coast line, and leaving us a disintegrated island of mineral wealth. I have to tender my sincere thanks to the following gentlemen, who have kindly supplied me with sections and other valuable information utilised in the composition of this paper:—Mr. Wm. Molineux, Fair Oak; Mr. W. North, Cannock and Huntington; Mr. Thomas McGhie, West Cannock; Mr. J. Hawkins, Cheslyn Hay; Mr. J. Hill, Ashmore Park Colliery; Mr. William Grove, jun., Wood End Section; Mr. Lyons Wright, Wolverhampton Waterworks; Mr. Wm. Spruce, Wallheath.

IMPROVED WINDING AND CAPSTAN ENGINES.

BY ALEXANDER SMITH, A.I.C.E.

The object I have in view in bringing this brief paper before the Institute is to introduce to your notice a few improved types of portable and fixed winding-engines and capstan-engines which I have mainly introduced. To some of our leading members, who have been conducting the new and extensive mining enterprises in which so much interest has recently centred, these engines are well known, as they have been largely adopted by them, but to the members generally I think the following description may prove interesting, and probably useful.

In sinking for coal or other minerals it is not often politic, for several reasons, to put down at once the engines intended to wind up the products of the mine. In many instances it is uncertain whether the measures sought for will be found at all, and in other cases till the mine is proved it is impossible to judge of the future output, and, consequently, the description of plant required. Even where the area and the quantity of the minerals to be worked have been pretty well ascertained, it is far from economical to sink the pits with the large winding-engines, as little power is necessary, and the speed need not be great. It has been almost a general custom to sink pits with small stationary engines and boilers, which are removed when the coal, ore, or stone is reached, and the winding-engines are put to work. On account of brick foundations, and house for the engine or engines, the setting for the boilers, and the difficulty experienced in fitting up and taking down this class of engine, the expense has been found to be great, and latterly portable engines have been introduced for sinking and winding from moderate depths.

The first attempt at adapting portable engines for winding purposes was to utilise, by the addition of drums and gearing, the ordinary agricultural engines and builders' hoisting engines, but these have entirely failed, because of the lightness of their construction and other defects which have not been remedied in many of the portable winding-engines that have been introduced and largely adopted. Without entering into any analytical description or critically examining the several classes of portable winding-engines now in use, I would just say that they are mostly subject to the following defects, which from the first I think I effectually remedied in the engines I have introduced. These engines, then, are generally either too light for the purpose intended, or they are too elaborate in their construction, and not suitable or sufficiently simple for the comparatively speaking rough usage they get in mining work. The boilers in many instances are of the tubular locomotive type, and are unsuited for the mineral water so often necessarily used, and are not understood by the majority of engine drivers. The engine are frequently attached to the boilers, so that when expansion and contraction takes place an undue strain is thrown upon both; and, lastly, there is with not a few of the leading types the objection that the engines, boiler, and winding gear are not on the same frame and foundation, or, in other words, they are not self-contained.

The engravings put into your hands will, perhaps, better illustrate the engines to which I wish to call your attention than diagrams. The portable, with single drum, is intended for either sinking or winding from moderate depths, and is equally well adapted for incline work. It consists of a pair of cylinders, inverted upon cast-iron vertical frames, entirely independent of the boiler, fitted with proper slides and link reversing motion. Upon the crank shaft is a pinion gearing into a large wheel upon the drum shaft. The drum is oak lagged, and has a centre cast-iron ring when required. It is fitted with a strong break and clutch gearing, by which it can be disengaged from the engines for running back in incline work. The clutches are made secure for permanent winding. The boiler is of the plainest description, there only being one or two large stay tubes across the fire box, so that the circulation is perfect. The engines, winding gear, and boiler are all fixed in the most compact form, either upon a wrought-iron frame and wheels, or upon a cast-iron semi-portable frame.

The portable, with the two drums, was constructed upon the joint suggestions of Mr. Thomas Pasfield and myself, and several of them are working upon the Earl of Dudley's estate. In general construction they are similar to those just described. A separate drum may be used for each of two pits, which may be worked independently, as the drums can be put in or out of gear, or one drum may be employed in drawing from a pit, level, or slope, whilst the other is used for an incline on the surface. The hauling and winding engine, with two horizontal cylinders, of which you have an illustration before you, is also made portable by being placed upon a wrought-iron frame, with a boiler at the end, and the drum can be divided to work two pits if required. The cylinders are also placed diagonally, as with the capstan engine.

I think I may justly claim for these engines the following advantages:—They are designed from the very foundation, and made strong, suitable for mining work. They are fitted ready for use, either upon a cast-iron frame or a wrought-iron frame and wheels; and the handles, &c., are within easy reach of the driver. The materials and workmanship are of the best. The vertical engine frames are entirely independent of the boiler; there are, consequently, no injurious effects from expansion or contraction. The latter always being sufficiently taxed by steam pressure, without having to support or carry the engines. The internal arrangements of the boilers are such that they are less liable to incrustation and corrosion, and more easily cleaned than the plainest stationary ones. They save the expense of brick settings and foundations, and are readily moved about. This is of importance in a colliery, as in case of accident they can be transported to any spot, and brought into service immedialy. For the same reason they are handy for, and because they are self-contained they cannot be affected by working shallow mines. They have worked over six years without needing any repairs, when being drawn about from place to place to sink all the shafts in a large colliery. The drum and crank shafts can be extended to receive cranks or pulleys for driving pumps or ventilating fans, &c. The engines are carefully adjusted, and can be perfectly relied upon for bringing the men up instantly before shots are fired in sinking. Four of them are working in the Earl of Dudley's collieries, and one, only 15 horse power nominal, sunk the famous Lye Cross Pits to a depth of nearly 300 yards. The largest shaft here was 18 ft. diameter, and had 40 sinkers engaged upon it, using dynamite. Much water was met with, which was all drawn by the portable engine; and the mining engineer, Mr. Thomas Latham, says he knows of no other engines that would have done the work so safely or expeditiously. One of the same type, 10-horse power, was used for sinking the ventilating shaft, and wound the materials whilst a considerable portion of the driving out was proceeding. They are made any size from that suitable for winding from the most shallow mine to that capable of sinking the largest and deepest pit in the kingdom. They are very economical in regard to fuel, and are unquestionably the cheapest yet introduced. Perhaps you will permit me to read the following critique upon them from the Engineer of Sept. 15, 1876:—

> The use of portable winding and sinking machines in collieries and other mining work, has extended enormously within the last few years, and a considerable number of different designs for engines of the kind are familiar to engineers. In many instances these engines are too expensive or too complex to suit the purposes of owners of small pits, such as may be met with in almost any town in the Black Country. The engine, which we illustrate in the accompanying engraving, has been introduced into Staffordshire by Mr. Alexander Smith, C.E., of Dudley, with considerable success, on purpose to meet the requirements of small mine-owners. The boiler and steam winch are combined as shown, and when pumping gear is required it can easily be worked with the rest of the machinery. No attempt has been made at refinement of design, either in the engine or the boiler. Mr Smith's object has been to produce at a moderate price a safe and reliable apparatus, which may be safely entrusted to the care of a Black Country fireman, and in this, we believe, he has been quite successful. It is a mistake to suppose that a market exists only for the best type of engines. That which is best suited for a woollen mill would be by no means the best for the pit's mouth, and something may be learned from Mr. Smith's unpretentious design which is worth knowing.

The hauling and winding engines, one of which is shown in the engraving before you, consist of a pair of horizontal engines, connected by strong gearing wheels to a drum, and all constructed in a compact and convenient form upon one bed-plate. They combine the greatest amount of power and strength in the least possible space, and, therefore, are valuable as hauling-engines in the mine. They are made with two drums if required, each independent, and worked by clutch gear. When so ordered they are put on frames with boilers, and made portable.

The capstan engines, or steam capstans, also illustrated, were designed to satisfy a want often expressed for an efficient and compact capstan engine, suitable for mine pumps. They are made in the best style possible, and are either double or treble purchase. In single gear they will run quickly with one pipe or "tree," whilst in the others they will draw the rods, or raise and adjust an entire pump lift, any weight, with the greatest possible nicety. The outside drums are useful for lifting weights anywhere about the pit head or bank. The first one was designed by Mr. Henry Johnson, sen., and myself for the Sandwell Park Colliery, the idea being taken from the ordinary ship's capstan, and they have been adopted at the Hamstead and Perry Collieries, and many other of the most important mines throughout the kingdom. I recently put up a capstan of a somewhat different type for Messrs. Thorneycroft and Co., and am now engaged designing others of a still more improved form for two important companies in this district. Should any member be further interested in the engines I have described, I shall be pleased to show them new ones in my stores at Dudley, or scores working in the South Staffordshire and other districts.

An interesting discussion was then held upon these engines, in which Messrs. T. Latham, George Jones, W. B. Collis, T. Pasfield, C. H. Treglown, and Alexander Smith took part. Most of these gentlemen had had a long practical experience of the engines, and spoke highly of their capabilities, convenience, and durability.

A vote of thanks was accorded Mr. Smith, and suitably acknowledged by him.

PAPER HOUSES.—A manufacturing company in Wisconsin, according to the New York Mail, keeps three mills constantly running on building paper, having capacity for the making of 16 tons per day. "The paper is a thick, hard pasteboard, wound in rolls of 25 lb. to 100 lb. each, and usually 52 in. wide. While in process of manufacture it is subject to a pressure of hundreds of tons, which compresses the fibres together in one solid body, thus making an absolutely air-tight sheet; and as paper is one of the best non-conductors known, it resists the action of both heat and cold, and so a building lined with it is made warm in winter and cool in summer. It is not affected by frost, cold, heat, or dampness; and it is known that it will not burn as readily as wood, on account of its hardness and solidity, and by its use a house can be almost, if not absolutely, tight."

NEW OFFICE SIGNAL.—It has been the custom for some time to employ in offices and other places speaking tubes, the ends of which come into the two rooms between which communication is desired. These pipes are terminated at each end by a bell mouth, in which a whistle is inserted by pushing, so that a person blowing through the tube from one end sounds the whistle at the other end as a signal that he wishes to make a communication. On withdrawing the whistle and putting the bell mouth to the ear the listener can hear what the person speaking at the other end of the tube says. In ordinary times the whistle is, therefore, in the bell mouth, as it is necessary to be always ready to hear the signal; but it frequently happens that the whistle falls out and prevents the person blowing from the other end being heard. To avoid this inconvenience Mr. C. M. COURTOT, of Paris, has invented a bell mouth and whistle in one piece, which can be made to act at will, either as a whistle to signal or as a bell mouth to transmit the words, and this without the necessity of removing a single part. The apparatus is fixed in a casing of wood or metal, terminated by a bell mouth at one end; at the other end the casing receives a threaded socket, to which the acoustic tube is fastened. The casing is hollowed out to receive the whistle. The whistle is formed by a metallic plate cut in a suitable manner, and by another piece, also of metal, hollowed on the inside, the end of which piece is adjusted in such a manner as to form a whistle. These two pieces are soldered together. The air which is blown in from the opposite end of the pipe is directed upon the whistle by an inclined plate arranged in a metallic tube. The parts forming the whistle close the rectangular part of this tube. The inclined plate is pivotted and can be raised by the push-in action of a rod, which is caused to act upon a lever or tail piece. This rod simply penetrates by its thin end the eye of the lever, and is stopped by a shoulder against the plate. To facilitate manipulation the rod carries a button. The plate is cut so as to embrace as exactly as possible the interior shape of the pipe portion of the bell mouth. It rests in the circular part of this pipe or conduit upon a semi-cylindrical socket soldered to the pipe and cut obliquely. By the side of the joints the plate rests upon a caoutchouc pad fixed in a cavity. This caoutchouc is compressed when the button is pressed so that the natural position of the plate is an inclined position—that is to say, the apparaaus if left to itself will whistle upon a person blowing through the pipe from the opposite end. It is only necessary to

press upon the button to raise the plate if it be desired to use the apparatus as an ordinary bell mouth for receiving or conveying messages from one end to the other of the accoustic tube. The metallic part which constitutes the whistle and the conductor of the wind can be fastened to the casing in two different ways. Either the plate is soldered to the tube, and thus the whole can be maintained by a screw, or else the plate is independent of the tube, in which case the latter is simply placed in the casing and the plate to which it is soldered; its whistle plate is fixed by screws, thus dispensing with the necessity of the first-named screw.

WATSON BROTHERS' MINING CIRCULAR.

Ten years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the Journal on the Clementina Mine.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash or for the usual fornightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

In the year 1843, when mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c.,
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THE MINING DISTRICT OF LLANRWST.

Passing over the River Conway, by the "shaking bridge," at the town of Llanrwst, we get at once from Denbigh into Carnarvonshire, into what is called the mining district, as well as into the most lovely wooded and mountain scenery that one can imagine. These mountains, however, particularly those through which we are climbing, are riddled with old shafts, and scored in all directions with adits and open cuttings of the old miners; so that, while stopping to admire the grandeur of any particular spot or bit of scenery around, we are likely, if we step back without thought, to drop into an ugly and awkward hole. But these old works, and excavations and adits, show the great extent to which primitive mining was carried on some years ago in the district, and the riches that must have been obtained to enable the work to be done; for the old miners—one of whom, of great intelligence, we met with in our travels—worked without capital, and from hand to mouth. They followed a course of lead when they found it, and sunk pits and drove adits when necessary, but they never stopped to drive them or open out ground in a systematic manner. If they came to a bit of dead ground they gave it up; if the water came in and drowned their best work, they simply went further and found another vein, and worked that till stopped, in all probability, in the same manner. They got loans as subsist from tradesmen in the neighbourhood, and sold their lead ore by the hundredweight. In one spot, in D'Eresby, we found the remains of some primitive smelting-works, and from the shallow workings in this mountain many hundreds of tons of lead ore were obtained.

Mining operations are now going on upon a more extensive scale, and, at the same time, according to modern science and skill; and if we take a stand on D'Eresby, and look around, there are Coed Mawr Pool, White Cliffe, Llanwrst, Vale of Conway, D'Eresby Mountain, Bryn-i-ttefeldiod, Pencraig, Pandora, and Clementina.

It may be as well to premise here that accompanying a director of Clementina and D'Eresby, who has had great experience of mining both in Australia and England—these two mines were the main objects of our visit, and will be the subjects of our principal remarks, though we wished to see as many mines as we could, so as to become acquainted with the general features of the district, and compare the different lodes and strata.

Some years ago, at the bottom of a mountain near Llanwrst town, and within a few feet of the high road to Conway, an east and west vein of lead was discovered, and a shaft sunk upon it about 12 fms. deep, when the water stopped further operations. In the bottom of this shaft, we are assured, there was a lode of 10 in. of solid lead. Over the road there are beautiful meadows, the surface of which is held sacred from the pick and gad. The owner of this sett, therefore, when the water stopped operations by the roadside, went 60 fms. higher up the mountain, sunk another shaft, discovered a north and south lode, and raised large quantities of lead. When the shaft was down 15 fms. he died, and the mine, then called Tyntwill, was sold to a limited London company—nearly at the end of their capital. This company commenced operations at the shaft in 1871, and during the first year's working raised and sold lead ores about enough to pay costs. They sunk the shaft 10 fms., or to the 25, and sold altogether 1800*l.* worth of lead. This company also worked other mines, and their capital having become exhausted got into liquidation two years after they had obtained Tyntwill.

Two years it remained idle, and was then purchased and called CLEMENTINA. It was formed into a company in 128 shares, 20*l.* paid-up, not a farthing paid either in premium or promotion money; and the price was about the value of the materials on it. As the 25 level for the short distance it had been driven yielded 1500*l.* worth of lead, and was richest in the bottom, the Clementina Company commenced operations by sinking the shaft to the 35, so as to drive under the ore in the 25, and open out at once a large tract of ore ground. This shaft is now down to the 32, and will soon be at the 35. In the meantime the 25 end has been continued for some little distance on an end worth 1 ton of lead per fathom. A winze has been sunk from the 15 in ore, and a rise put up to meet it from the 25, also in ore (1 ton per fathom), and these will be communicated in about a week, when, the agent assured us, six men would be able to stope ground and break 2 tons of lead ore per *week*. When the shaft was commenced from the 25 there was scarcely any appearance of ore on the north and south lode, but it soon opened out worth ½ ton, then 1 and even 2 tons per fathom, and is still going down in 1 ton per fathom. The result of these preliminary trials is that 12 tons of lead have been broken, and in about a month the first sampling will take place. At no mine that we visited did we see such rocks of nearly solid lead, some of them 1 to 2 cwts. each, as we did at Clementina. It may be mentioned here that the ore now raising is from the north and south lode; the east and west lode, referred to in the shaft near the road, was intersected at the 25 level, 4 fms. from the engine-shaft, and yielded in some places 3 tons per fathom. This will also be met with at about the same distance from the shaft at the 35; and the level east, driven to *get* under the road shaft, thus there will be four ends on two lodes at the 35—two on the east and west lode, and two on the north and south.

The mine is at present worked by a small water-wheel, which pumps and works the crusher when dressing; there is also a small steam-engine for drawing the stuff. The dressing-floors, which are imperfect and contracted, are capable of dressing about 20 tons a month, but can be enlarged and improved to any necessary extent, as the returns increase. A waterfall comes down from the mountains to the mine in great force, and in wet times has to be diverted, so that half of it runs to waste, and the other half is utilised for the wheel; in hot and dry weather the supply fails to be sufficient. To remedy this and to obtain an unfailing supply of water, a new lease of the mine, for 21 years, has just been granted, including about 4 acres of land in the mountain for a reservoir; and to form an embankment here and keep a large body of water always in reserve will cost from 50*l.* to 100*l.*; the rent of the reservoir is 5*l.* a year. Between the present engine-shaft and the road shaft the lode has been worked away for lead to the very surface, through a hard rock, that forms a natural cavity, in which a wheel of any size can be placed at small expense; here, then, we propose to erect at once a 30-ft. wheel, powerful enough to take the mine down to the 100 level, and also drain the road shaft, and enable the lode there to be worked. It is estimated that this work and the reservoir can be done for about 300*l.*, and then the smaller wheel now used for pumping would be worked for drawing and crushing only, and the steam-engine be sold.

We had proposed seeing the lode at the 35 fm. level before doing this and enlarging the dressing floors, but the director who went underground, on Wednesday, is so satisfied with the prospects of the mine that he wishes it done at once; and as there is plenty of capital in hand it will be done; and in a few months after its completion the mine, we hope and believe, will be in a position to pay dividends. One important advantage the mine has over others is this, it is close to the high road, 1½ mile from the Llanrwst Railway Station, and 1½ mile from a shipping place, so that the carriage is only 3s. per ton.

D'ERESBY MOUNTAIN, which is 300 ft. high, is, as we have described above, covered with old shafts and levels, and must have yielded the old miners vast quantities of lead in their rude attempts at mining. In one spot there are the remains of old and primitive smelting works. Four distinct levels have been driven into the hill; in one called the intermediate level large quantities of lead were broken, and a winze sunk in a rich lode to the water. An old and very intelligent miner, who worked this level 20 years ago, assured us that he and his mates broke upwards of 100 tons of lead from the neighbourhood of the winze. The present company are driving an adit to unwater this winze, and open out a large run of ore ground in from 10 to 15 fms. of backs. This level has been driven a great many fathoms, and is now from 10 to 15 from the winze. By continuing it further it will come 45 fms. under a lode near the top of the mountain, where the present company have raised 20 tons of blende, and have a lode worth 2 tons per fathom. The agent assured us that he could at present put 30 men to break good lead and blende in the intermediate level, but it will be much easier and better to get at when the winze is drained; and a wheel and crusher has to be erected further down the valley. At the point for this machinery and the dressing-floors there is a fine stream of water, and it is close to the mouth of a still deeper adit, which will be cleared, driven, and made a tramway for the ores from the upper parts of the mine to the dressing-floors. The Llanrwst and other lodes (north and south intersecting east and west) run through this sett for a long distance, and it is considered by many persons we met to be second to none in the district, and certainly it looks as if great success might shortly be attained with a very small outlay, and there is every natural advantage for cheap working. The mine is in 512 shares, 20*l.* fully paid-up, and limited.

[To be continued.]

SATURDAY, JUNE 9.—Market quiet, with scarcely any alteration in prices, except that Roman Gravels are quoted 9¾ to 10¼; Rookhope, 20s. to 22s. 6d.; North Laxey, 17s. 6d. to 20s.; West Tankerville, 20s to 25s.; Tankerville, 7 to 7⅛.

MONDAY, JUNE 11.—Market active for Glenroy, North Laxey, Rookhope (Lead), and East Van. The latter are quoted 5 to 5⅛; North Laxey 17s. 6d. to 20s.; Glenroy, 20s. to 25s.; Roman Gravels, 9¾ to 10¼; Rookhope, 20s. to 22s. 6d.; Tankerville, 7 to 7⅛; Van, 33⅛ to 35½; West Tankerville 20s. to 25s.

TUESDAY, JUNE 12.—Market still good for Glenroy, North Laxey, and Rookhope; West Chiverton also better, at 15 to 16; Parys Mountain, at 8s. to 10s.; Roman Gravels, 10 to 10⅛; Tankerville, 7 to 7⅛; Rookhope, 20s. to 22s. 6d.; West Tankerville, 20s. to 22s. 6d.; North Laxey, 17s. 6d. to 20s.; East Van, 5 to 5⅛; Glenroy, 20s. to 25s.

WEDNESDAY, JUNE 13.—An active demand to day for North Laxey, Rookhope, Parys Mountain, Glenroy, Leadhills, and West Chiverton. Glenroy, 20s. to 25s. North Laxey, 19s. to 21s.; Parys Mountain, 8s. to 10s.; Rookhope Lead, 20s. to 22s. 6d.; Leadhills, 6 to 6½; West Chiverton, 15 to 17.

THURSDAY, JUNE 14.—Market still active for North Laxey, Rookhope, Parys Mountain, West Chiverton, and Glenroy, but no alteration in prices since yesterday. Leadhills, 6 to 6¼.

FRIDAY, JUNE 15.—Market rather weaker for most shares.

FOREIGN MINING AND METALLURGY.

The Belgian iron trade has presented few new features of interest. No contract of any importance has been concluded, and prices have remained stationary. The Acoz Forges Company has just made a trial of a new train for plates. M. Evrard, a member of the Belgian State telegraph corps, has published a note on the employment of iron posts on the Belgian telegraphic lines. M. Evrard is not able at present to report whether the employment of metallic telegraph posts would be attended with satisfactory economical results as compared with wooden posts, because it is still impossible to calculate with precision their probable durability. If, however, iron posts last for 50 years, while the average existence of wooden posts does not exceed 20 years, the renewal of lines constructed with iron posts would necessarily involve less outlay for materials and labour. A contract for six goods engines with their tenders is about to be let for the Danish State Railways. A dividend at the rate of 10 per cent. per annum is announced by the Thy-le-Château Blast Furnaces and Forges Company; this dividend is payable July 1.

The slight increase of activity in the French iron trade which was noticed earlier in the year has slackened, and working operations are now being carried on with rather less energy than they were a week since. Nothing definite has transpired at present with reference to the renewal of Treaties of Commerce; the French Government would appear to be occupied just at present with matters of more pressing importance. Preparations for the French Universal Exhibition of 1878 are proceeding favourably. The works are being pushed forward with activity. At Paris the iron trade presents the same prices, and very nearly the same amount of activity as for some time previously. In the Nord prices remain at from 6*l.* 16s. to 7*l.* per ton, but some little concessions are made to secure contracts. Luxembourg pig keeps at a very low point. The Paris, Lyons, and Mediterranean Railway Company has decided to make an experimental trial of the iron sleepers of MM. Brunon Frères, of Rive-de-Gier. This experiment is watched with some interest by the French iron trade.

The slight revival which has been noticed in the Belgian iron trade has not yet become sufficiently decided to give a serious impetus to the sale of coal. The new crop of beetroot not being a particularly promising one in Belgium, the sugarworks are rather tempted to reduce their supplies of coal than otherwise, and the summer is accordingly not likely to bring with it any advance in prices. Advices from Dortmund state that the demand for coal has become rather more active in Germany, and that some colliery proprietors have been enabled to advance their rates in consequence. Several cargoes of coal have been forwarded to Russia, Sweden, Belgium, and Holland. The quantity of coal sold by the Belgian Collieries Company in 1876 was 3,626,457 hectolitres; coke was also sold to the extent of 70,335 hectolitres. These totals present decreases of 742,399 hectolitres and 4644 tons respectively. The selling price of the company's coal has fallen about 20 per cent. during the last 18 months. In 1875 the company realised a profit of 12 520*l.*, but in 1876 its operations were attended with a loss of 11,967*l.*

There is little of interest to report with reference to the French coal trade. There has been rather more animation in the collieries, but it does not appear probable that this additional animation will have much influence on prices; at the most, it will enable the stocks which have accumulated to be disposed of upon rather more advantageous terms. The beetroot sugar crop does not promise well in France, as well as in Belgium. The French iron trade is giving out tolerably regular orders, but coalowners have to regret that they are not larger. The death is announced of M. Chagot, director of the Blanzy Mines. M. Ernotte, of Lievin, has also died suddenly. M. Chagot only last year raised his solitary protest against a resolution adopted by the Council-General of the Nord, calling upon the French Government to carry out coercive measures so as to secure the immediate working of all the mineral concessions of the department. M. Chagot's death is regarded as a serious loss to the district.

At Paris, Chilian copper in bars has made 74*l.* per ton; ditto ordinary descriptions, 72*l.* per ton; ditto in ingots, 75*l.* 10s. per ton; English tough cake, 76*l.* per ton; English, best selected, 76*l.* 10s. per ton; and pure Corocoro minerals, 74*l.* per ton. At Rotterdam, Banca tin has made 42¾ fls., and Billiton 41¼ fls. Upon the Paris market Banca, delivered at Havre or Paris, has made 78*l.* 10s.; Billiton ditto, 76*l.* 10s.; Straits ditto, 75*l.* 10s.; Australian ditto, 75*l.*; English, delivered at Havre or Rouen, 75*l.* per ton. French lead, delivered at Paris, has brought 21*l.* 10s. per ton upon the Paris market. Spanish, delivered at Havre, 21*l.* 6s. per ton; English ditto, 21*l.* 6s per ton, and Belgian and German, delivered at Paris, 21*l.* 10s. per ton. At Rotterdam, Stolberg lead has brought 13¼ fls.; Spanish, 13¼ fls; and German of various marks, 12¼ fls. Rolled Vieille-Montagne zinc, delivered at Paris, has made 30*l.* per ton.

ECHOES FROM THE MINING MARKET.

The North Laxey "spurt" has continued during the week, the shares being in greater demand than ever at the close at an advance of 2s. 6d. per share. The price is now 19s. to 21s., and should the present indications and improvements hold on well we may expect to see the price advance beyond that attained some 18 months since, when a large business was done at 2 to 2¼. The rise in these shares has naturally drawn attention to other cheap lead mines, and a large business has been transacted in Glenroy and Rookhope. Other shares in which a fair business has taken place have been West Tankerville, Pandora, Aberdaunant, Llanrwst, and Derwent.

Among the dividend lead mines Leadhills, Tankerville, West Chiverton, and Great Laxey have been the most prominent. Roman Gravels have declined to 10, 10⅛, upon selling orders, attributable, we believe, to a growing feeling of dissatisfaction at the irregular distributions of profits. The management has also been assailed. It is certain that the promises made a year since have not been fulfilled, and doubtless the matter will be thoroughly ventilated at the next meeting.

Tin shares still keep very quiet, and there is no new feature in the market for the metal. During the week East Pool has given a dividend of 2s. per share. This distribution seems to have caused great dissatisfaction, for the accounts plainly show that the management were not justified in paying anything at all. Unsold tin, unsold arsenic, and unsold wolfram have been credited, whilst costs have been charged only to *March 24 last*. We understand that this would leave upwards of 20000*l.* of costs actually paid but not charged. The credits are brought down to the 9th *inst.* It is no use mincing matters when such a balance sheet as this is presented to shareholders. It is a disgrace to the management, and we believe that an application for an injunction to stop the payment of the dividend would be successful, for the distribution is clearly contrary to the spirit of the Cost-book System. The amount in question—620*l.*—may be small, but the gain to Cornish mines by the success of the application indicated would be great, for we do not hesitate to say that the managers of some of the leading mines are the greatest offenders in the way they render their accounts.

For our part we would never invest in a single Cornish share where the costs were not charged up closely, and where the accounts were not vouched for by a professional auditor. It is in mines where the system is followed of leaving out large debits, merely to present a rosy state of affairs, that—when an accumulation of indebtness forces them into the Stannaries Court—many shareholders are ruined, and it is only fair, therefore, that those who are expected to protect the interests of "out adventurers"—which means the general investing public—should speak plainly, so that investors may know the risks they incur. Therefore we now remind our readers that a holder of a cost book mining share is liable not only for his proportion of every liability (an if the mine goes into liquidation this includes the heavy costs of the Court of Stannaries), but if his co-adventurers should be unable to pay for the whole of the debts, to the full extent of his private resources. His liability is, therefore, practically unlimited. The Cost book System rightly administered is a good one, for it comprehends the absolute squaring of accounts every two or three months, but of what use is such a system if its safeguards are systematically set at nought by those who control the finances of our leading mines? The general system of making up accounts which now obtains in Cornwall is a standing reproach to the county, and we hope that so long as that system is adhered to the investing public will sedulously avoid the shares of the offending mines.

JAMES H. CROFTS.

THE WEEK.

SATURDAY, JUNE 9.—Roman Gravels continue to be offered, and to day receded further. They could be had without difficulty at 10⅛. West Tankerville were in request, but very few seemed to be offering, though 7¼ was bid. Exchequer shares were wanted, at 4s. Glenroy were offered at 19s. Rookhope and North Laxey were neglected. The general markets opened dull, but the tone was firm at the close. Egyptian Preference rose to 59¾, after being done at 57½. The Unified, from being done at 37¾, was finally braced up to 39. There was a rise of 1*l.* in Dover A, to 110¼.

MONDAY.—Cape Copper improved 10s. These shares have now recovered nearly 2*l.* from the lowest touched a short time back. At the present rate of dividends they pay 10 per cent when at 40*l.* Exchequer shares were in request, but nothing much was done. Seeing the shares quoted ½ to ¾, various orders were sent to buy at 2s. 6d. The only effect they had was to put up the price to ¾, ⅝. Roman Gravels were offered at 10⅛, and Rookhope at 10s.; Leadhills, 5¾ to 6¼; Glenroy, ⅞ to 1⅛; Richmond, 6½ to 6⅝; Brighton Aquarium, 13 to 13½; Forestreet Warehouse, 12½ to 13½ prem.; Imperial Credit, 7¼ to 7⅜; Upper Assam, 6 to 6½; General Credit, 6½ to 6¾; Tramways Union, 4½ to 4¾. The Mid-June settlement commences to-morrow.

TUESDAY (Continuation-day).—There was a backwardation of ¼ on Caledonian, and the stock was continued at 124¼, against 118½ last account. No other railway has had a similar rise. The recovery now from the lowest point touched this year has been not less than 12. The greatest rise after Caledonian has been in Dover, A, which were continued last account at 107¼, and now at 111½. In Egyptian Preference a rise of exactly 7 has been established, from 54½ to 61½, and one of 5 in the Unified, from 5⅛ to 40¼. Russian of 1873 continued at 79½, against 78½ last month, and after allowing for the dividend this represents a further rise of 3½. The rate was 5s. Eberhardt made up at 7, Exchequer at 4s., Tankerville at 7, Richmond at 6¾, and Flagstaff at 2¼.

WEDNESDAY.—A further rise of 1*l.* took place in Cape Copper shares, not being obtainable at less than 39*l.* An improved report from North Laxey led to an enquiry for shares; they could be sold for 2s. Rookhope, 19s. to 21s., and rather inclined to dulness. West Tankerville, ⅞ to 1⅛; Parys Mountain, 8s. to 10s.; Pynlimmon, 2s. to 4s.; Van Consols, 1½ to 1¾; New Quebrada, 1¾ to 2. Frontino were dealt in at 2¾ (2*l.* paid); this company was established in 1834, and until June of last year never did anything for its shareholders; a dividend of 1s. per share was then declared. The shares are extremely well held. Caledonian touched 125 to-day, but relapsed to 123½. There was a fall of 1¼ in North British. A rumour that a fresh loan was forthcoming caused a relapse of from 2 to 3 per cent. in Russians.

THURSDAY.—The new Russian loan will be, it is stated, for 15,000,000*l.*, in 20*l.* bonds, issued probably at about 15*l.* As there are to be drawings, it seems intended for the continental industrial classes, accustomed to State lotteries. At the opening a very apprehensive feeling was uppermost. Russian being as low as 7¾, and Caledonian down to 122¾. It was not long, however, before the latter were in demand at 124. Glenroy and North Laxey were in request at 20s. Richmond shares rose to 7.

FRIDAY (Opening).—The markets are firm. Consols are higher, and there is some fresh speculative buying of Great Eastern. Both Midland and Berwick have risen. Russian of 1873, 77 to 77¼. Exchequer and I.X.L. shares are quoted 6s. to 8s. Rookhope, 19s. to 21s.; and North Laxey, 19s. to 21s. Tankerville are wanted at 7¼. Roman Gravels offered at 10¼. Gorsedd and Merllyn, 5 to 5¼; they have just sold 50 tons of lead here at the highest. Glenroy, 20s. to 22s. 6d. San Pedro, 3¾ to 5⅛. East Van, 5 to 5⅛. Parys Mountain, 7s. 6d. to 8s. 6d. Pateley Bridge, 2½. Leadhills, 6 to 6¼.—*Two o'clock.*—Prices in some instances are lower. Egyptian Preference, 60¾ to 61; ditto Unified, 40½ to 40¾. British are only 92½ to 92⅝; and Midland, 127¼ to 127¾. Consols are 94¼ to 94⅜. Richmond shares continue in demand at 7*l.*, and Flagstaff are 2⅜ to 2½. Hudson Bay are down to 10¾, 11. One failure has taken place.—*Four o'clock.*—Railways are closing strong. Midland, 127¼ to 128. Berwick, 151⅜ to 151½. Great Western, 100½ to 100¾. Egyptian Preference are 60¾ to 60⅝; and the Unified, 40¼ to 40¾. Flagstaff are 2⅜ to 2½. East Van is wanted at over 5. Leadhills and Glenroy are firm. Glyn and Wheal Grenville neglected.

Birchin-lane, June 15.

FERDINAND R. KIRK.

THE OUTLOOK.—Both of the great companies to resume at once. We congratulate our citizens on the outlook. Both of our great mining companies are to resume active operations within the next two weeks. This is to transpire, no matter what may be the delays attending the hearing of the pending suit. Both of the companies now have an ample supply of ore outside of the disputed territory. The Richmond has lately developed one of the finest and most extensive ore bodies ever brought to light in the grand old mountain. After the granting of the injunction in February, superintendent Rickard and foreman Potts turned their attention to the unexplored ground in the north western portion of the mine. The prospects were promising, and they prosecuted the works vigorously. Finally their efforts were rewarded with success, and to-day the Richmond is more valuable than ever before in its history. The new discovery is immensely rich in silver and lead—richer by far than anything the mine has hitherto produced. The body is also known to be of great extent. It has been pierced and cross-cut for a distance of 80 ft. in solid high grade ore, and the end is not yet. Undoubtedly it is one of the most important discoveries that has ever been made in Eastern Nevada, and important to the town of Eureka almost beyond measure. The Richmond furnaces are thus enabled to resume operations at once with a certainty of continuing to run up to their full capacity for an indefinite period, regardless of the issue of the lawsuit. And now it only remains to be said, in this connection, that the furnaces will start immediately after the first of the coming month. As regards the Eureka Consolidated, every preparation is being made for an early start, certainly within ten days or two weeks. The development on the fifth level, recently noted in these columns, is turning out so magnificently that superintendent Donnelly entertains no fears about an abundance of ore in the future. So that it is an assured fact that

the Consolidated is to be fired up for a long and profitable run. In addition to this, Superintendent Shaw of the Jackson, designs making a heavy run of the rich carbonates from the lower levels of his mine. He will supply one of the Consolidated furnaces just as soon as the works get under headway once more. It is thus shown that the prospects are most flattering for all the furnaces in the district, and we trust to be in full blast within a very short time, with plenty of ore in sight to keep them moving uninterruptedly for the remainder of the season.—*Eureka Sentinel*, May 20.

THE EXCHEQUER.—A very rich strike has been made in the 400, a body of fine ore having been reached. We are told that at least 2 ft of the new discovery is a mass of native silver. It is to be regretted that a little "unpleasantness" now exists here on account of the company's tardiness in settling its indebtedness. Its London owners must know that their American creditors cannot afford to wait for their pay until the mill grinds it out. We believe that the indebtedness of the company will be paid within a short time, and thereafter the miners, who work hard for the money they earn, should be paid monthly. If the present indebtedness is cleared we think the mine will pay its own way.—I X.L.: Everything is going on finely at this mine, and good ore continues to come out. The mill is being put in order to start up.—*Alpine Chronicle*, May 19.

FOREIGN MINES.

RICHMOND CONSOLIDATED.—R. Rickard, May 21: Since my last we have struck a good body of ore in a rise in back of the 500, west from shaft. We are up 60 ft. from the 500, with good ore still in the back—the ore is of good quality. We do not know what extent this ore body is; we are now opening on it, and shall ascertain something about its dimensions in a short time. At present it looks well. Nothing new in any other part of the mine. The overhauling of the machinery and furnaces is progressing rapidly.

CAPE COPPER.—Capt. Tonkin, April 30: Ookiep: The water in the bottom of the shaft has increased very much of late, consequently we are making but slow progress in the sinking. The 80, east from No. 19 winze, continues very changeable. At one time during the month it was worth 12 tons of ore per fathom; now, however, it will only yield 2 tons; but from the present appearance of the ground in the end of this driving, I feel confident that there will soon be a favourable change in the value of this level. We have started a cross-north from the side of the 80 east, and although this driving will at present yield only 3 tons of copper ore per fathom, yet I feel sure that we shall shortly intersect valuable ground. The trial levels in the 80 have not discovered any copper that will pay for stoping, but at times we have cut through small branches of very rich ore, and the ground is well worthy of being thoroughly explored. The two principal stopes in the bottom of the mine have yielded large quantities of very rich ore during the month, and at present they are valued at 1 and 12 tons per fathom respectively. The 68, north-east from No. 15 winze, has become entirely unproductive. The end of this driving is now in hard granite rock, therefore it is suspended. The 68, east from No. 13 winze, produces a few stones of very rich copper ore, but the yield is not enough to value. The 58, east from No. 20 winze, shows spots of copper ore throughout the size of the end, but no value can be attached to the driving. The other levels in the mine have not changed since last report. The stopes in the 68 and upper levels have yielded very well during the month, and they maintain their respective values in a satisfactory manner. On the dressing-floors we have an ample supply of labourers, and the weather continues very fine, consequently we are enabled to make good returns.

Spectakel.—Capt. Tonkin, Capt. Ninnis, April 25: The 36 east, towards Hookan course, continues very poor. The end of the driving shows a few spots of ore, but the ground does not look favourable. The 27 south, towards Kelly's shaft, produces a little copper ore, but not enough to value. We have started to sink below the old workings in the open-cast pit, but our prospects there are not very cheering.

Trial Mines.—Capt Tonkin, Capt. Linkabury, April 15. The driving at Karolusberg continue very poor, and unless there is a favourable change shortly we shall suspend them, and put the men to cross-cut north and south. At Nabobeep the shaft below the 17 is passing through some layers of unproductive ground. The most important trial for this mine will be in carrying out levels from bottom of shaft, as the drivings will intersect the run of ore ground passed through in the upper part of the sinking, if it continues in depth. The 17, east from old shaft, has somewhat improved in appearance, and the end produces some good stones of copper ore. The level at Narrap is at present yielding a little more copper ore than usual, but not enough to value. The trial shaft west of Ookiep Mine is being sunk through ground which is spotted throughout with copper ore, but we have not yet intersected anything of value

Returns for April.—Yield from Ookiep, 950 tons of 34 per cent.; from Spectakel, 53 tons of 25 per cent.—Bills of Lading Received: 75 tons of ore, per Caldera (s.); and 38 tons, per Countess.—Arrival at Swansea: The Corsair.—Sales by Public Tendering: 500 tons on May 22, at an average of 13*l.* 7½*d.* per unit, realising approximately 11,150*l.*; and 280 tons on June 5, at an average of 13*l.* 9¼*d.* per unit, realising approximately 6250*l.*—Put Forward for Sale: 240 tons of ore on 19th inst.—Progress plans and sections of the Ookiep Mine are received, and can be seen at the company's office. Dividend declared, 2*s.* per share, payable on the 23rd inst.

LUSITANIAN.—June 5: Pelhal: Taylor's engine-shaft has reached the 200 fm. level, and the lode in the bottom is still worth 5 tons of ore per fathom. In the 20, east of the shaft, the lode is worth 1½ ton per fathom, and in the 20 west 8 tons per fathom. The shaftmen are now engaged in hauling the stuff from these levels up to the 190. At the 50 cross cut, north of Perez' shaft, there is a close head in the end, but no lode. The lode in winze No. 108, below the 150 west of the slide, is 1 ft. wide, composed of quartz and spots of ore. In winze No. 106, east of River shaft, below the 28, the lode is producing ¾ ton of ore per fathom. Winze No. 107, west of Taylor's, below the 180, is yielding ¾ ton per fathom. In the 190, west of Taylor's, the lode is worth 1½ ton per fathom. The lode is still in an unsettled state in the 180, west of the slide. The lode in the 170, west of Taylor's, is also unsettled, and the men are removed to the 190 west. At the 150 west we are cutting in north trying to find the lode upon which the winze No. 108 is being sunk below the 150, west of the slide, in order to drive on the same. In the 150 end west the lode is nearly 1 ft. wide, composed of quartz and country, with spots of ore. The lode in the 90, east of River shaft, is 3 ft. wide, composed of quartz and lime, with spots of lead. The lode in the 50 east of ditto, is worth 1 ton of ore per fathom. In the 70 east the lode is 2 ft. wide, of flookan, quartz, and country, with spots of lead. The 28 east is suspended, and the men are removed to the 160 west.—Carvalhal: The lode in the 60, west of the cross cut south of incline shaft, is small and unproductive. In the 30, north of the great lode, and west of the incline shaft, the lode is 10 in. wide, containing quartz, country, mundic, lead, and good stones of blende.

PESTAGENA UNITED (Gold).—June 7: District of Val Tonpa: In Zero lee, south of the third cross-cut on the western part of the great quartz lode, the lode is yielding in the present end about 5 cwts. of ore per fathom; worth, as per mill trial, 7 dwts 20 grs. of sponge gold per ton. In the winze behind this end the lode is producing 8 tons to the fathom; worth, as per mill trial, 1 oz. 16 dwts. 3 grs of sponge gold per ton. We hope to communicate this winze to the intermediate level this month. In the end south at the intermediate level below Zero the lode is small at present, with stones of ore, of which we made last month two small mill trials, the first giving after the rate of 8 grs, and the second 14 dwts. 7 grs of sponge gold per ton of ore. We are looking forward to an improvement in this end shortly. In the end north the lode is disordered, and yielded occasional stones of ore. The stopes in the bottom behind the south end continue to yield 10 tons per fathom; worth about 9 dwts. per ton. No. 1 stope in the back of No. 2 level, south of the second cross cut west, is giving 5 tons to the fathom; worth 8 dwts. per ton. No. 2 stope is yielding 9 tons per fathom; worth about 14dwts. to the ton.—Great Quartz Lode: The stopes in the bottom of the No. 2 north of winze continues to yield 10 tons per fathom: worth 5 dwts 4 grs. of sponge gold per ton, and the assay shows it to be worth 4 dwts. 2 grs of fine gold per ton. In the intermediate end south under No. 2 level, a small mill trial of stone taken last month gave after the rate of 1 oz. 1 dwt. 17 grs. of sponge gold per ton. Since this trial the lode in the end has so much fallen off that we have suspended driving for the present, and commenced a new rise behind the end, where the lode should give 10 tons to the fathom: worth on an average 9 dwts per ton. In the No. 3 level south in the mountain the lode is small but looking promising.

The Marmo Rosso lode, in the No. 2 level, south of first cross cut east, is not looking so well, giving about 3 tons to the fathom, worth, as per mill trial, 14dwts 2 grs. of sponge gold per ton.—Flat and New Lodes: A mill trial of the stuff from the end south in Zero level did not show any trace of gold. The estimated distance yet to be driven to reach the line of the shoot of ore worked on in No. 1 level is about 2½ metres; and to reach the line of ore worked on in No. 2 level should be about 58 metres further.—No. 2 Level: In the winze south of the fourth cross-cut, on the flat lode, we have communicated to the southern end of the stopes in the back of No. 3 level, opening up a good piece of ground. A mill trial of picked ore from the winze gave after the rate of 5 ozs 4dwts. 22 grs. of sponge gold per ton. The stopes on the flat lode, in the back of No. 3, have been resumed, and are estimated to yield on an average 9 tons of ore to the fathom, worth 12 dwts. per ton. The drive south, on the flat lode, under No. 2 level, is poor in the present end, and driving has been suspended for the present.—No. 3 Level: In the end north of cross cut the lode is about 3 ft. wide, mostly quartz, at present of no value. The stopes south of cross-cut yield 8 tons per fathom worth about 8 dwts. to the ton.—Lode and Branches East of New Lode: The driving of the end south, on the flat branch, above No. 2 level, is suspended, a mill trial of the ore showing no gold of value, and the rock not looking so favourable; and we have resumed the end north of this cross cut, on the same branch—No. 2 Level: No. 1 stopes in the back, south of fourth cross cut, on the flat lode yield 4 tons to the fathom, which we estimate to be worth 12 dwts to the ton. No. 2 stopes yield 2 tons, worth about 7 dwts. per ton. The fourth cross cut, eastward at this level, is being continued in a favourable kind of rock. On surface good progress is being made in building walls for new floors for the No. 4 level.

District of Pestagena: Peschiera: No. 2 lode, in the 33 end north, is small, and of little value in the present end—driving suspended. No. 2 stopes, in the back of this level, are also stopped, and the men put on richer ground. No. 1 stopes, in the back of the 55, yield 6 tons per fathom, worth 10 dwts. of gold per ton. No. 2 stope about 4 tons per fathom, worth 1 oz. 12 dwts. per ton. In the 55 end north the lode is small, and not to value at present. In the 65 the rock continues without change in the cross-cut west. In the end south of this cross-cut, on the lode, the lode is small, with stones of ore; 15 metres further driving will bring us on or opposite the line of ore extracted in the shallow levels, on No. 1 lode. In the 80 end north, on No. 1 lode, the lode is yielding 1 ton to the fathom, worth 1 oz. 1 dwt. per ton. In the back of this level we have commenced a new stope, where the lode will give about 6 tons of good quality ore per fathom. In the 90 south the lode is yielding 4 tons per fathom, worth 2 ozs. 4 dwts. per ton. In the 90 north the lode is yielding 7 tons per fathom, of good quality ore; a small mill trial of ore taken from this end of late gave after the rate of 3 ozs. 4 dwts. per ton. In the new incline shaft the lode is yielding 5 tons to the fathom, worth as per mill trial 2 ozs. 13 dwts. per ton. In consequence of a breakage that we had last month to the eccentric of Acquavite pumping-wheel, and the Peschiera pumping-wheel being idle at the same time for repairs, the sinking has been impeded several days by the water covering the bottom. The eccentric was replaced by a new one, and all the repairs done to each of the machines, which are again at work, and we hope to be able to resume sinking the new incline shaft to-morrow, and during this month get it down sufficient for a fork for water, and next month commence the driving of two ends northward and southward for a 100 fm. level.—Acquavite Department: In the winze in the bottom of the 46 the lode is poor; during this month we hope to communicate this winze to the 58. In the stopes in the back of the 58 the lode yield 3 tons per fathom, worth 16 dwts. per ton, and in the back of the 28 the stopes are yielding at present 2 tons per fathom.—Surface: I am pleased to state that fair progress is being made in excavating for the new mill house floor and for the water wheel pit, a large force of hands being employed, and to facilitate this work we have been taken from underground some of our best miners, because we have plenty of rock to cut in this excavation. The new adit is also progressing favourably. For the convenience of sending materials to Pestarena Mines we are fitting up our old ore deposit at the end of the cart-road, near Ceppomorelli, into a kind of storeroom, because up to this time we have been depending on others for a depôt there; this storeroom we hope to finish this month.

[For remainder of Foreign Mines, see to-day's Supplement.]

Meetings of Public Companies.

MEDLYN MOOR MINING COMPANY.

A general meeting of shareholders in this promising young tin mine was held at the mine on Thursday, June 7. The statement of accounts presented by the SECRETARY (Mr. Granville Sharp) for five months' costs against four months' returns was read, the items being as follows:—Labour cost, 1263*l.* 9*s.* 8*d.*; merchants' bills, dues, &c., 437*l.* 2*s.* 8*d.*; balance brought forward from last account, 822*l.* 13*s.* 10*d.*; making a total on the debit side of 2523*l.* 6*s.* 2*d.*; whilst on the credit side was 869*l.* 4*s.* 5*d.*, realised by call made on Jan. 31 last; tin sold, 553*l.* 15*s.* 6*d.*=1412*l.* 19*s.* 11*d.*; leaving a balance of 1100*l.* 6*s.* 5*d.* The following report from the manager having been read:—

June 6.—We beg to hand you the following as a detailed report of our operations since your last meeting, on Jan. 31; also our opinion of the prospects for the future. The engine-shaft is now in course of sinking below the 27 by six men, and in order to get the work pushed as fast as possible we have set 5 fms as a contract for 100*l.*, which includes fixing lift and other work. The shaft is now about 9 ft. below the level, and in sinking 4 fms. more we shall reach the junction of two lodes—No. 1 north and No. 1 south lodes. This is a point that should be looked forward to with great interest, as all the rich courses of tin in the district have been found on or about junctions and intersections.—No. 1 South Lode: The 27 fm. level has been driven west of shaft 33 fms., and the last 10 fms. has been through a strong well-defined lode, worth on an average 10*l.* per fathom, lode in the present end (3 ft. wide) worth 10*l.* per fathom, driving by six men, at 6*l.* per fathom; 5 fms. behind this end a rise is being put up for the purpose of laying open stoping ground and ventilating the level; the lode here is worth 10*l.* per fathom, working by six men, at 5*l.* per fathom. About 10 fms. west of shaft a rise is put up from the 27 and communicated with the 17; this has laid open a large amount of stoping ground. The 17 has been extended west of flat-rod shaft about 20 fms., through a lode 4 ft. wide, and in places worth 15*l.* per fathom; lode in the end at present is 2 ft. wide, worth 6*l.* per fathom (to-day, June 7, worth 9*l.* per fathom, improved since inspection on Tuesday), driving by six men, at 7*l.* per fathom. The lode in the stope in back of this level is worth 9*l.* per fathom.—No. 1 North Lode: The 27 has been extended east of shaft 16 fms., all through moderate tin ground; lode at present 15 in. wide, worth 4*l.* per fathom; driving by two men, at 3*l.* per fm. —No. 2 North Lode: The 27 has been driven east of shaft 16 fms., and nearly the whole of the drivage has been through moderate tin ground; but in the last 6 ft the lode has been broken up by a small cross-course, but we are pleased to say it is again becoming settled and regular, and, no doubt, will improve and be valuable, as we shall shortly be getting under a long run of tin ground, driven through in the level above; four men are working here at 3*l.* 10*s.* per fathom. (This point I could not value when underground on Tuesday, but to-day it is worth 6*l.* per fathom). The 27 has been driven west of shaft 12 fms.; lode 15 in. wide, worth 6*l.* per fathom, driving by four men, at 5*l.* 1*s.* per fathom. A rise has been put up in the back of this level and communicated with the 17. This has opened two sections of good tin ground, and enabled us to commence stoping in the bottom levels; also to increase the returns. In accordance with the Mine's Regulation Bill, we have repaired and put in good order a dry and changing house for the underground men; also built a new powder magazine, at a proper distance from the mine and all dwellings, which is required by a recent Explosive Act: these, with other surface erections, which are always necessary in a new mine, have increased the cost for the last four months. It will be seen we have five months' cost against four months' returns, and it is only since a communication has been effected from the 17 to the 27 (which is only seven weeks) that we have been in a position to work any stoping ground in the bottom levels. We are pleased to say the mine is opening up exceedingly well, and the lodes in the 27 are now quite settled and regular; and having three lodes all well laid open, the mine being shallow, and the ground easy for working, we consider the mine to be a valuable property, and when a little more developed we shall be able to work at a profit at a low price for tin. Number of hands employed as follows:—Tutwork, 38 men; tribute, 12 men; carpenter, 1; smith, 1 man and 1 boy; pitman 1; spalling, 2; landing and filling, 2; enginemen, 3; general surface work, 2; at stamps, 1 man, 10 boys, and 5 girls; total, 79.—JOSEPH PRISK, CHARLES ROWE.

It was resolved, that the accounts and report be received and adopted.

By the aid of the plan and sections of the mine, the different workings on three lodes were fully and satisfactorily explained. The following special report of the mine from Capt. E. Kempthorne was by request read:—

May 30.—According to your request, I have inspected the above mine, and send you the following as my report:—The engine shaft is sunk from surface to the 27 fm. level, and sinking is being carried on below the 27 fm. level for the purpose of deepening the mine, which I find is being done as rapidly as possible. This is highly essential in all mines, but especially so in a mine like Medlyn Moor, where you have the advantage of so many lodes to open on within a short distance of the main shaft. In sinking the engine shaft from the 27 to the 37 you will have a point of special interest at about 5 fms. below the 27. No. 1 north lode and No. 1 south lode will form a junction at this point; you may reasonably look forward to having a very fine course of tin, which, in a valley like this (in which the mine is), is almost certain to be the case.—No. 1 South Lode: The 17 fm. level has been extended east and west a considerable distance—say, about 75 fms.—and nearly all the drivage has been through paying tin ground. Lode in the west end 3 ft. wide, worth 8*l.* per fm. The lode in the back of this level is worth 9*l.* per fm.: the 27 fm. level has been driven west of shaft 25 fms.: the last 10 fms. driving has been through a hole worth 12*l.* per fm., and still goes on in a masterly lode worth full that amount. In the back of this level a rise is being put up for the purpose of laying the ground open for stoping; here the lode is worth 8*l.* per fm.—No. 1 North Lode: The 27 fm. level has been driven east of shaft about 20 fms.; lode in the present end 18 in. wide, opening tribute ground. This back is whole to surface, and will give a vast amount of stoping ground.—No. 2 North Lode: The 17 fm. level has been driven east of shaft 12 fms., through a good paying lode; but the ancients, in some places, had been down as far as the back of this level, and even below it, consequently not much stoping ground was found here. The 27 fm. level is driven east of shaft about 14 fms., all through good ground; but in the present end the lode is rather broken up by the influence of a small cross course. I look upon this as only temporary, and a few feet further driving will, I think, prove me to be correct. In the back of this level a rise has recently been holed to the 17, which has greatly facilitated the working of the mine by giving good ventilation and laying the ground open for stoping. The lodes are regular, well defined, and tinny throughout, and the ground congenial and exceedingly easy for working. Your underground workings are now getting extensive, and the exploring points are all being pushed forward vigorously, which is the proper thing to do. To open a mine from surface, as this has been done, must of necessity be a matter of time and expense; but that has now been mastered, and the most tedious part, the engine shaft, is in full swing of sinking for a deeper level. Two air-shafts and the western flat rod shaft are communicated to the 17, and two winzes sunk from the 17 to the 27, which has recently opened up profitable stoping ground, and will give increased returns. I find by the books the returns of tin are now 4 tons per month, or over. The surface erections, which have been expensive, are near completion, so that these extra costs may be considered at an end. In carefully considering the mine and its prospects generally, I can but say you have, in Medlyn Moor, a valuable property; one, when a little further developed, will give profits, even at a low price for tin.—EDWARD KEMPTHORNE.

The shareholders present expressed their approval of the miner-like manner in which their property was being developed, and with such favourable results. The permanent engine had been erected only two years, and the main engine-shaft had been sunk since that time from surface to a 27 fm. level, and is now 9 feet below that point, which will be continued to a 37 fm. level. As shallow as 17 fms. from surface three lodes have been met with, which have been worked to a very considerable extent by the ancients, in some places even deeper than 17 fms., thus proving the richness of the lodes so near to the surface.

Mr. SHARP presented an extract from the cost-book, showing the following gradual and satisfactory increase in the sales of tin:—

April,	1875, the tin realised	... ...	£ 17	5 0
August,	1875,	,, ,, ...	76	2 0
January,	1876	,, ,, ...	180	11 8
June,	1876	,, ,, ...	216	2 2
November,	1876	,, ,, ...	431	4 10

While the amount sold and credited in the accounts presented this day amounted to 553*l.* 15*s.* 6*d.*—the greatest proof that as the mine continues to be developed so the returns of tin are increased, which will continue to be the case, and with a better price for tin good profits will be realised. The agents consider that the sinking of the engine shaft to the 37 should be prosecuted with all dispatch, as at that depth there will be a junction of two lodes, and, as stated in the agent's report, there is every reason to believe a fine course of tin will be met with, and as there are but 3½ fms. further to sink to reach this junction it can be accomplished in about two months.

Capt. PRISK, in answer to a shareholder, stated that the merchants' bills were charged up close, and included all liabilities that had been incurred up to April 14.

The question of ways and means having been fully discussed, it was resolved "That a call of 4*s.* per share be now, and is hereby made, payable to the secretary as follows:—2*s.* per share on June 28, and 2*s.* per share on Aug 15, subject to a discount of 5 per cent. if paid on or before those dates."

A vote of thanks to the Chairman and the agents brought a very pleasant meeting to a close, everyone leaving satisfied that they were in possession of a valuable tin mine, second to none in Cornwall for the depth attained.

[For remainder of Meetings see to-day's Supplement.]

SUB-WEALDEN EXPLORATION.—The final report of this undertaking has just been issued by Mr. H. Willett (hon. sec.) He reports that the depth attained on Dec. 21 last year was 1823 ft., and on April 12, 1905 ft. On the last-mentioned date a letter was sent by the Diamond Boring Company, stating "We have used our best endeavours to reach a depth of 2000 ft. and have failed, owing to the want of lining permitting the hole to fall in on our rods and jambing them." It also stated, "There will be no difficulty at all in continuing the hole, subject to the arrangements being made for lining and the use of a big machine, which were submitted by Major Beaumont on Feb. 26." It was decided, however, not to make any renewed efforts. Mr. Willett writes:—"The Sub Wealden Exploration is, therefore, brought to a close, and has proved conclusively that in the lowest part of the Wealden area no palæozoic rocks exist within 1900 ft. of the surface. That the search was justified, and that the scientific deductions of Professor Prestwich, F.R.S., were entitled to the highest consideration may be found in the fact that palæozoic rocks of the Devonian period have been discovered (containing spirifers) in the boring made at the brewery of Sir Henry Meux and Co., at the corner of Tottenham-court-road, London. The following are the approximate measurements of this boring, the surface of which is about 70 ft above high-water mark:—Strata above the chalk, 159 ft.; chalk, 653 ft; upper green sand, 28 ft.; gault, 160 ft.; lower green sand, 120 ft.; Devonian (about) 40 ft.; total, 1170 ft." Mr. Willett adds,—"The search should, therefore, undoubtedly be further promoted in the valley of the Thames and at other points in the South East of England."

LEADHILLS—MONTHLY REPORT.

June 13.—Brow Mine: Glengonar shaft to sink below the 60 fm. level, by six men and two labourers as per contract, at 11*l.* 10*s.* per fathom; lode 4 ft. wide and very promising for the production of lead ore. The 60 to drive south of shaft, by four men, at 5*l.* 10*s.* per fathom and 5*s.* per ton; sparry, good-looking lode, but at present not to value. The pitch in the back of the 48 south of shaft, by two men, at 6*l.* per ton. The 40 to drive north of shaft, by two men, at 4*l.* 10*s.* per fathom and 5*s.* per ton; lode likely to make ore soon. The stope in the back of the 48 south of shaft, by four men, at 30*s.* per fathom and 10*s.* per ton; worth 2 tons per fm. The pitch in the back of the 30, by four men, at 100*s.* per ton; worth 2 tons per fathom. The cross cut east from the string to Brow vein, by four men, at 10*l.* per fathom. The stope in the back of the 20 north of shaft on east vein, by four men, at 50*s.* per fathom and 10*s.* per ton; worth 1 ton per fathom. Gripps' adit to drive north of shaft, by four men, at 7*l.* 10*s.* per fathom and 5*s.* per ton; lode much improved in general appearance, and now yielding orey stuff. The stope in the side of said level north, by two men, at 80*s.* per cubic fathom and 10*s.* per ton; worth 1 ton per fathom. The stope in the back of ditto north, by two men, at 65*s.* per fathom and 10*s.* per ton; worth 1 ton per fathom. The pitch in the bottom of Gripps' south of shaft, by two men, at 6*l.* per ton. The pitch in the back of Gripps south, by six men, at 6*l.* per ton.—New Vein: Gripps' adit north of Muir's cross cut on the above vein, by two men, at 7*l.* per fathom and 5*s.* per ton; worth 15 cwts. per fathom. The same level to go south of cross cut, by two men, at 6*l.* per fathom and 5*s.* per ton; worth 15 cwts. per fathom. The pitch in the back of Gripps' on Katrine vein, by three men, at 6*l.* per ton. Muir's cross-cut to go west towards the side lodes, by four men, at 11*l.* per fathom.

Brown's Mine: The 55, north of Jeffrey's engine-shaft, by four men, at 10*l.* per fathom and 5*s.* per ton, worth 20 to 30 cwts. per fathom; 6 ft. behind the present end the lode is worth 3 tons per fathom. The 55, south of shaft, by four men, at 10*l.* 10*s.* per fathom and 5*s.* per ton; a stong, sparry lode, but not to value. The 41 to drive north of shaft, by four men, at 10*l.* per fathom; lode 5 ft. wide, with stones of ore. A stope in the back of the said level north, by four men, at 70*s.* per fathom and 10*s.* per ton, worth 1 ton per fathom. A new winze to sink below the 41, south of the shaft, by four men, at 8*l.* per fathom and 10*s.* per ton, worth 2 tons per fathom. A stope in the roof of the said level south, by four men, at 55*s.* per fathom and 20*s.* per ton, worth 2 tons per fathom. No. 2 stope, south of ditto, by four men, at 60*s.* per fathom and 10*s.* per ton, worth 3 tons per fathom. Gripps' adit to drive south of the shaft, by two men, at 8*l.* per fathom and 5*s.* per ton; the lode not to value. A pitch in the back of the 10, north of shaft, by two men, at 6*l.* per ton. A stope in the back of Gripps', south of Hillside shaft, by four men, at 4*l.* 10*s.* per fathom and 20*s.* per ton, worth 1 ton per fathom.

Raik Vein: Jeffrey's cross-cut, Gripp's adit, south of cross-cut, by four men, at 6*l.* 10*s.* per fathom, and 10*s.* per ton; lode worth 4 tons per fathom, and improving as the end proceeds. The stope in the back of the said level, behind the end, by four men, at 40*s.* per fathom, and 10*s.* per ton; lode worth 3 tons per fathom. This, as you know, is the commencement of the new Raik vein. The pitch in the back of Gripps, north of Jeffrey's cross-cut, on Raik vein, by two men, at 110*s.* per ton. No. 2 pitch, north of ditto, by two men, at 5*l.* 10*s* per ton. The stope in the back of said level, by two men, at 55*s.* per fathom, and 10*s.* per ton, worth 1 ton per fathom. Gripp's adit to go north of the said cross cut, towards Reid's shaft, by four men, at 6*l.* 15*s.* per fathom, and 10*s.* per ton; stones of ore and barytes. Gripp's adit, to drive south of Reid's shaft, on Raik vein, by four men, at 6*l.* per fathom, and 5*s.* per ton—a very kindly lode. The 10 to drive north of No. 2 winze, by four men, at 6*l.* per fathom, and 5*s.* per ton; lode worth 6 tons per fathom. We have now 30,000*l.* worth of lead ore laid open for stopes in the back of the 10, north and south of said No. 2 winze, in reserve. The stope in the back of the 10, north of No. 3 winze, by four men, at 26*s.* per fathom, and 6*s.* per ton; lode worth 4 tons per fathom. No. 1 pitch, in the back of Gripp's, south of Reid's shaft, by four men, at 6*s.* per ton, worth 11 tons per fathom. No. 2 pitch, by four men, at 8*s.* per ton, worth 14 tons per fathom Watson's shaft, to sink below the surface, on the old Raik Mine, by six men, at 7*l.* per fathom; the present depth is 9½ fathoms.

Jeffrey's Lode: Gripp's adit, to drive west of Raik vein, on the above, by two men, at 6*l.* per fathom, and 5*s.* per ton—a kindly lode. No. 1 stope, in the roof of Gripp's west, by four men, at 65*s.* per fathom, and 20*s.* per ton, worth 20 cwts. per fathom. No. 2 stope, in ditto, by four men, at 60*s.* per fathom, and 15*s.* per ton, worth 30 cwts. per fathom. Pig-lead and lead ore on hand on the mine up to Friday last as follows:—Pig-lead clear of royalty, 230 tons; undressed ore of April raising, 1·5 tons; dressed ore of ditto, 100 tons; yield for May, 240 tons; ore in wagons lower floors, 50 tons=785 tons. We estimate the returns for June at 300 tons.—A. WATERS.

*** This report was received too late for insertion in its proper place:—

WHEAL GRENVILLE.—T. Hodge, June 13: I beg to hand you my report of this mine for the general meeting to be held to-morrow. At the time of your last meeting the mine was flooded with water, which occupied two months to drain out; but for this our loss on our regular working would have been but very little.—Western Shaft; The 160 fm. level east end is worth 7*l.* per fathom. The stope in the bottom of the 150 east level is worth 8*l.* per fathom. The stope in the back of the 150 east level is worth 8*l.* per fathom. The stope in the back of the 150 west level is worth 7*l.* per fathom. The 150 east end is worth 6*l.* per fathom; I am daily expecting an improvement here. About 2 fms. behind the present end a branch came in from the south which rather disordered the lode. The old tin lode is still standing to the south; I expect to reach the junction of said lode at a point near the north shaft, or say 30 fm. before the present end. The rise in the back of the 140 east level is producing low price tin stone. The stope in the bottom of the 130 level is worth 8*l.* per fathom. Davie's stope, in the back of the 130 east level, is worth 14*l.* per fathom; the stope east of said stope is worth 9*l.* per fathom. The 130 east end is worth 8*l.* per fathom. The 130 west end is worth 7*l.* per fathom. The north shaft is in regular course of sinking below the 140 fm. level. I intend to push down said shaft with all dispatch, in order to communicate with the 150, coming in east, as early as possible. This done, our water will come back to our new engine, and if the latter level opens out according to my expectations, we shall open out a section of productive ground that cannot be taken away for many years to come; the shaft is about 9 ft. below the 140 fm level. The north shaft is cut down and made secure to the 100 fm. level; we have also finished cutting ground for the fend off bob at the 50, put in bearers and cut cistern plat at that level. Next week we shall commence to cut ground for a balance bob at the 80, and also to cut ground for bearers and cistern to fix at that level. The 130 east end is worth 10*l.* per fathom; I am hoping to open up a good piece of ground in this direction. The stope in bottom of said level is worth 10*l.* per fathom. We have laid down rails in our principal levels, which take away the stuff much more economically than by wheelbarrows, as hitherto.—Surface Work: The masons are getting on very well with the engine-house; I expect to complete the same and stack by the latter part of next month. We have erected several buddles, and are extending our spalling floors, preparing for more stamping power, and increased returns. We have sold to-day 16 tons 7 cwt 0 qr. 17 lbs. of tin at 43*l.* 5*s.* per ton, and carriage 710*l.* 3*s.* 9*d.* The mine, on the whole, is opening out very well, and if we had more stamping power we could nearly cover expenses with the present low price of tin.

STEEL ARMOUR TRIALS.—Some interesting trials with compressed steel armour plates, manufactured by Sir J. Whitworth, will shortly take place at Shoeburyness, in order to test the value of this steel in comparison with iron plates.

STEAM-ENGINES.—The value of steam-engines exported in the last five months was 814,784*l.*, against 731,136*l* in the preceding year.

WEIGHING AND TILTING COALS.—Hitherto the screened or small coal only has been weighed, and the weight deducted from the gross weight, the difference being considered to be the weight of the round coals; this method being liable to lead to fraud and disputes Mr. H. GIBSON, of Pegswood, near Morpeth, proposes to have a tray suspended from a Salter's balance, and so placed at the bottom of the shoot or spout as to receive the round coals falling down the shoot from the tub. To steady the tray, and to prevent it coming into use as a scale before required, that side next the shoot is secured thereto by a hook called a gab, which is released when the contents of the tray is to be weighed; the release of the gab hook throws the whole weight of the tray and its contents upon the aforesaid balance, and the weight of the same indicated to the attendant by the position of the index hand, and noted down by him; this being done the attendant again secures the tray by means of the gab, and at the same time removes a weighted lever working on a fixed fulcrum; to the outer arm of this lever is attached the before-mentioned Salter's balance with the tray depending therefrom, consequently when the lever is released the tray is left unsupported, except by the gab on which it turns as a hinge, and tilts or tips the coals into a wagon placed beneath, or into a heap for the market. When the tray is freed from the coals the weighted arm of the said lever at once exercises its power and returns the tray to its former position, which position is secured by any suitable means and under the control of the attendant. This being done the apparatus is again ready for use.

SUTRO TUNNEL.—This big bore had reached, on May 8, a distance of 16,658 ft., or 5553 yards—or rising 3 miles.

The largest single shipment of bullion ever made from the Comstock was made on May 19, consisting of 150 bars of bullion, valued at $568,720·81.

The directors of the National Provincial Bank of England have announced that the dividend, at the rate of 8 per cent. per annum, and bonus of 7 per cent., will be payable on July 10.

The Copiapo Railway Company's report for the year 1876 shows that the income was $399,402, and the expenditure $278,120, leaving $321,282 of net earnings, which has been distributed in four quarterly dividends of 2 per cent. These, however, required $336,000, and the balance has been taken from the reserve fund. There has been a slight falling off in both the goods and passenger traffic—in the former entirely due to less coal freight, owing to large stocks being on hand at Copiapo. The expenditure has augumented about $9000 in consequence of the repairs to locomotives, and steel rail renewals.

The Bell Abbey & Falcon Cliff Mines

(LIMITED).

ISLE OF MAN,

CAPITAL £50,000, IN 10,000 SHARES OF £5 EACH,

(First Issue, £30,000.)

Deposit on application, £1 per share. On allotment, £2 per share. The remainder to be called up as required.

DIRECTORS.

RALPH FAWSETT AINSWORTH, Esq., M.D., F.L.S., &c., Cliff Point, Broughton, Manchester.—CHAIRMAN.
EDMUND BUCKLEY, Esq., Wool Broker, Dale Street, Liverpool.
FRANCIS JAMES EATON, Esq., General Broker, Queen's Buildings, Dale Street, Liverpool; and Ilesketh Park, Southport.

(Each of whom has subscribed for 200 Shares.)

With power to add to their number.

BANKERS.

LIVERPOOL—The BANK OF LIVERPOOL, Water Street, Liverpool; AND GLYN, MILLS, and CO., London.
ISLE OF MAN—The ISLE OF MAN BANKING CO. (Limited).

SOLICITORS.

Messrs. LACES, BIRD, NEWTON, and RICHARDSON, 1, Union Court, Castle Street, Liverpool.

AUDITORS.

Messrs. J. S. and R. BLEASE, Public Auditors, Liverpool.

SECRETARY—MR. WILLIAM C. BEW.

REGISTERED OFFICES.

COLONIAL BUILDINGS, 36, DALE STREET, LIVERPOOL.

PROSPECTUS.

In offering to the public such of the First Issue of shares in this company as remain unallotted, the directors are fully justified in believing the investment to be one which will amply repay those who avail themselves of it.

The directors have hitherto abstained from advertising, or taking any of the other modes usually adopted for the purpose of placing shares, and have preferred, with the aid of a few personal friends, to carry on the workings on a somewhat limited scale at their own cost, and to defer appealing to the public till a revival in commerce should render it an easy task to obtain the capital necessary to do justice to the many and great points of interest in this eminently valuable property.

The time has, however, now arrived when they feel that the mine should be no longer only partially worked, or in other words, starved, and that its intrinsic value and promise have been so far established that no continuance of commercial depression ought to prevent their receiving applications for a far greater number of shares than they are now offering; and they have been the more impelled to this conclusion by the discoveries made to the north of the Bell Abbey workings, the numerous intersections of which are shown in the field marked B 3.5 on the plan accompanying the prospectus.

In calling attention to the annexed reports, it is hardly necessary to say that it would be impossible to find more talented, experienced, or reliable, as well as successful, mining engineers than Mr. Walter Eddy, of Llangollen: and Capt. John Kitto, of Llandilloes, the manager of some of the most prosperous new mines in the kingdom. And the directors have confidence that the very strong opinions expressed by these gentlemen in their reports, confirmed and supplemented as they are by the letter kindly volunteered by Capt. William Kitto, manager of the rich Foxdale Mines (whose thorough knowledge of the district and great ability render him second to no living authority) must satisfy the public that the shares of this company form an unusually sound and valuable investment.

The report of Capt. Richard Barsell, the company's mine agent, may also be implicitly relied on as being the result of well-trained and mature judgment, based upon careful daily observation.

By those who already know or will take the trouble to examine the property, no reasonable doubt can be felt that with a liberal and judicious expenditure of capital in developing the features which have now been established, it must speedily prove itself to be a most valuable and lucrative mine, or rather series of mines.

The greatest care has been taken in laying out the workings and buildings, and in securing the best class of engines, machinery, and other appliances, under the superintendence of Mr. A. Francis, of Rhosddu, Wrexham, and in all these respects the mine may challenge the severest criticism.

The property is now held under Crown lease at unusually low rents and royalties, and has the special advantage of water power, which will obviate the necessity for erecting additional permanent steam power to carry out proposed new workings.

The sett contains about 1120 acres.

The purchase money to be paid by the company is £9000.

No promotion money will be paid.

The remuneration of the directors will be fixed by the shareholders in general meeting.

In the event of no allotment being made to an applicant, his deposit will be returned in full.

The deposit on application for shares may be forfeited, and the allotment cancelled, by the directors in all cases where the further payment on allotment is not duly made, in accordance with the terms of the allotment letter.

Copies of the Articles of Association, the surveyors' reports, the provisional agreement, &c., can be inspected at the Solicitor's and the Secretary's offices.

The only contract entered into is one bearing date 1st March, 1876, between Ralph Fawsett Ainsworth, M.D., Edward Wrangham Bird, Edmund Buckley, and Francis James Eaton, as vendors, and William Charles Bew, as purchaser, on behalf of the new company.

Prospectuses and Forms of Application can be obtained from the Bankers and Solicitors, and at the offices of the company.

Applications for shares will be received by the company's Bankers.

REPORTS.

To the Directors of the Bell Abbey and Falcon Cliff Mines (Limited).

Isle of Man, April 30th, 1877.—GENTLEMEN: We inspected your mine on the 14th instant, and after careful consideration submit to you our report thereon, more especially referring to what we advise as to the future workings. Your shaft is sunk 74 fms. below adit, and levels driven for considerable distances north and south, at intervals of 12 fms.

The lode is of great width, and the promising indications it showed almost at surface, and the frequent bunches of ore (lead, copper, and blende) met with throughout fully warrant, in our judgment, all the trials which have been made. (The copper already sold by you, as well as that we saw in the mine and at surface, is certainly of superior quality. The lead and blende we take as being about the average of Manx ores.)

These bunches of ore have always occurred where the lode has become firm and compact, but as it is disturbed by occasional slides and bands of shale—which may possibly continue to some extent even in depth—we would advise you to let the ore ground now laid open in the various levels on tribute (which would at the same time be proving that part of the mine), and devote your principal energies to the ground north and south, where your acquisitions of additional land, and trials at surface, would appear to have established two distinct mines free from the disturbances alluded to.

First, the South Ground: Having acquired an additional length of 300 yards, which actually includes the great Dowke east and west lodes, at the junction with which the principal part of the lead ore raised in the adjoining mine has been found, you are now at liberty to resume your driving south, which had to be stopped pending your negociations; and we cannot doubt but that you will quickly meet with at least equal success with your neighbours, the distance to be driven being but short; and it is in exactly similar positions that all the productive mines in the Isle of Man, particularly Great Laxey and Foxdale, have made their great bodies of ore. In short, you cannot fail to intersect these great Dowke lodes, and we have every confidence that you will meet with good and profitable discoveries of ore in this direction.

Second, the North Ground: Here your tracing a newly-found ore-bearing lode from the adjoining mine, through the field in your property marked No 315 on the large ordnance map, has resulted in the discovery of at least three new lodes, forming junctions with each other in positions leaving nothing in this respect to be desired, and your trial pits prove them to be of the most promising character. As you are equally impressed with ourselves of the great importance of this part of your set, we need not say more, but cannot too strongly urge your commencing operations without delay.

The entire property is very extensive, being about two miles on the course of the main lodes. The machinery is in excellent working condition, and of the best construction. New leases have been obtained on the most reasonable terms, and the additional land to the south (to which reference has already been made) combine to constitute it one of the most promising mining sets in the whole Island.

In conclusion, we have no hesitation in recommending your at once raising the necessary capital to carry out the workings which we have indicated, and we believe that you will have occasion to be perfectly satisfied with the necessary expenditure required to develope what you have a right to regard as a thoroughly sound and promising mine. WALTER EDDY, Mineral Surveyor.

JOHN KITTO, Manager of the Grogwinion, Wyn Valley, Red Rock, South Cwmystwith, St. Harmon, West Goginan, and other Mines.

Copy of Letter from Capt. WILLIAM KITTO, Manager of Foxdale Mines.

Isle of Man, May 5th, 1877.—DEAR MR. BEW: I have read Mr. Eddy's and my Brother's report, and having been frequently through your mine, I can endorse all it contains. If it errs, it is on the side of caution; but there is one point upon which I think none of you lay sufficient stress—I mean the driving of your adit northwards. I have often said to you that were I in a position I would risk my own money here, trusting solely to what I could discover as payment or remuneration for my outlay, as to my mind courses of ore are sure to be found making up to the surface, as they have done so close to you in the adjoining mine; besides which, you have the advantage of the level as the natural drain. When you are in a position to employ more labour, allow me to urge that this be one of your first operations. I believe you may safely rely on the results. WM. KITTO.

Bell Abbey and Falcon Cliff Mine, Colby, Isle of Man, May 5th, 1877.—DEAR SIR: Capts. Eddy and Kitto having lately inspected your mine, I will confine my remarks to our present operations and a few suggestions as to the future.

60 North.—The part of the lode we are carrying on consists chiefly of spar, with small cavities in it, some of which contains cubes of lead and mundic. The country rock to the east is less broken than in some parts of the level outwards. This point is of much interest, because it is immediately under the copper discovered in the 48 fm level, from which we have had such good ore in bulk; but as the ore usually dips north, the end is not sufficient advanced to catch it. Personally, I have strong hopes of this.

49 North.—In the sole of this level a "stope" is being worked by four men south from the sump which communicates with the 60, but this is pretty well exhausted, as the orey ground is limited in this direction by the crossing of a strong flookan course. We are now making preparations to "stope" north. I would remark here that it is from this section of ground we have been raising nearly all our copper. Two men are employed in driving an intermediate level between the 48 and 60, off from a rise 30 fms. north of shaft, with a view of proving a succession of short bunches of lead that were passed through in both of these levels. So far the lode has not been sufficiently productive to pay cost for driving; but some very good patches of steel-lead ore have been met with.

36 North.—There is a "stope" in the roof of this level worked by four men. The lode is 4 ft. wide, mixed throughout with lead and blende ores, which can be worked at a profit. This section of orey ground extends at least 15 fms. in length, and is looking a great deal better going up. From this stope we have a large pile of ore stuff, which we are now in the course of dressing.

24 South.—The drivage of this level has been recently resumed, and on account of its being in the immediate neighbourhood of several known cross-courses, which have caused the lodes in the adjoining sett to be productive of good ore, we may reasonably expect that it will be successful. The lode in the forebreast is well defined, and presents a very encouraging appearance. Not far from the present end there is a shaft sunk in the Glen by former parties, in which there is said to be a good rib of lead. This we shall quickly prove.

Adit Level: Exploratory operations constitute an important element in the opening out of mines, and judging by the results of our neighbour's working in an exactly similar position, I would strongly recommend its further extension northwards at once.

I would beg to call your attention again to one or two undeveloped points, especially to where some trials were made some time since, about the centre of your ground, marked 315 on the Ordnance map. Three very strong lodes were discovered forming junctions within an area of a few fathoms. Every miner knows that it is at these intersections that success as a rule is secured, and I really hope you may, without further delay, instruct me to begin operations upon a more extended scale. With your intimate knowledge of the nature of the various lodes, you at least cannot doubt the result. R. BARKELL.

Mr. WILLIAM C. BEW.

Extract from Report, 12th May, 1877.

I am glad to tell you the stope in the roof of this level (the 36) is gradually improving going up. I never saw it looking so well as it is to-day, and the men say they never saw anything in the mine so good.

Dressing: We are getting on with this—crushing the copper to-day, and have a good pile of lead broken up for crushing.

Extract from Report, 21st May, 1877.

24 North: I put two men here to-day, and find there is some very nice lead in the roof. No doubt is a continuation of that we have in the 36 stope.

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, June 13: The new shaft is sunk 3 fms. below the deep adit, in the east part of the sett (Crowlwm) I have set the cross-cut to drive towards the new lode by six men and one boy, at 10*l.* 5*s.* per fathom for the month. No change to notice during the past week.

ASSHETON.—J. Craze, Joel Manley, June 14: No change worthy of remark in any part of the mine since our last. We have shipped the 30 tons of lead sold to Messrs. Neville, Druce, and Co., and have also engaged a vessel for the blende, which we daily expect here. Dressing is being pushed on with the utmost dispatch for another parcel of lead.

BAMPFYLDE.—J. Juliff, H. Hiley, June 13: The ends and stopes have improved in appearance. In the 142 end, west of No 4 shaft, the lode continues to improve in value, now worth 15*l.* per fm. In the 90, west of No 4 shaft, the lode in the end is worth 7*l.* per fathom. No. 1 stope, in back of the 112, west of No. 4 shaft, is worth 12*l.* per fathom. No. 2 stope, in back of the 112, west of No. 4 shaft, is worth 8*l.* per fathom. No. 3 stope, in back of the 112, west of No. 4 shaft is worth 10*l.* per fathom.

BODIDRIS.—H. Hotchkiss, June 13: The 60 yard level east, on main lode, is still of a very favourable appearance; the lode is about 3 ft. wide, containing spar, gossan, spots of lead ore, and blende; ground rather more difficult for breaking. The cross cut going south is still in favourable ground for driving, now 3 ft. wide, and fair progress is being made. In the 45 yard level, driving east, the rib of solid steel lead ore in front of this level (mentioned in my last) still continues about 4 in. wide, and for 1 ft. up to the end of beautiful stuff, of which I have had half a kibble sent to surface for inspection; appearances show as if we were skimming the top of a great course of ore. I have the tram rails and wheels on the mine, and directly the wagon and sleepers are ready (which we are now busy at) will have them laid down in this level, which will when complete enable us to make quicker dispatch in getting out the stuff. The stopes in back of this level and the bottom of the 30 yard level are producing good lead stuff for dressing-floors. No other alteration in the mine.

CAMBRIAN MINES.—T. Glanville, June 14: ESGAIR FRAITH: Since my report of June 7 we have taken out the old drawing lift at the eastern shaft, and replaced it by a new one. During this stoppage of our pumping apparatus the water accumulated and prevented our doing but little at the shaft. The water is now, however, in fork, and we are again cutting out the part of the lode south of the shaft, which is of the same character as mentioned in my last report. We have commenced to cut out a part of the lode in the 10 east, which is composed of carbonate of lime, intermixed with good copper ore.

ESGAIR-HIR.—We are sinking the shaft from surface with a full pare of men, to communicate with the crosscut 300 fms. from the mouth of the adit with all speed. About 100 fms. east of this shaft we are driving a cross-cut north to intersect the lode, which has never been seen in this part of the mine.

CASHWELL.—J. Peirt, June 9: The heading in the south vein in the Scar limestone is not looking so well going up to the top of the sill; we have started another heading close to this one, and will see what it is like before we go much higher, as there is no good in working this out unless there is ore to pay. We have a good vein going forward, and fair ore in it. The headings in this vein in slaty haze are looking rather better; the west one is a little softer, and contains more ore. The heading in the north vein in the Scar limestone still continues poor; we shall stop this heading for the present, and drive the drift forehead to see if we cannot get into some good ore further forward. The heading in this vein is in slaty haze, and is still producing some very good ore. There is little change since last month; the ore at this point to all appearance will set up to the top of the sill, and is easy to work. The Horse level continues the same. Very good progress has been made in clearing out the Cashwell level. We sold on the 18th ult. 11 tons, to Mr. Joseph Dinning, Langley Lead Works, for 5*l.* 8*s.* 6*d.* per ton.

CLEMENTINA.—W. Bennett, June 14: The lode in the north end of engine-shaft is worth 1 ton of lead to the fathom, and I am glad to say that the lode has improved in the bottom and south end of the shaft, and by the appearance of the lode a much greater improvement will shortly take place. In the 25 end south the lode is 1 ft. wide, worth 1 ton of lead to the fathom. The lode in the rise in the back of the 26 fm. level, south of the engine shaft, is 1½ ft. wide, worth 1 ton of lead per fathom.

COMBMARTIN.—C. H. Maunder, June 14: At the 37 the lode is worth 7 ozs. of silver-lead per fathom. The stopes are producing the usual quantity of ore. To-morrow being pay and setting day, a full report will be given you next week. We are pushing forward with our surface work as fast as possible.

— E. Hosking, June 15: Telegram: The lode in the 37 end has much improved, yielding ¼ ton of rich silver-lead per fathom.

CAM DWYFOR.—J. Jewell, June 14: We have extended the 20 fm. level 10 ft. west of Stewart's shaft, but have not got clear of the killas rock. The lode in the roof and for 1 yard down is 8 in. wide, between two beautiful walls, and the country rock is full of quartz and sulphur veins, and I have not the least doubt that the lode will turn out all right by the time we have extended the level 2 or 3 fathoms further west. We have about 7 fathoms further to drive this level before we shall effect a communication with the winze we are sinking from the 10 fathom level.—Counter Branch: In sinking the winze in the bottom of the 10, west of Stewart's shaft, on this counter branch, the men are sinking by the side of the lode for speed; the ground is very hard, and spare for sinking. I have started this winze 6 feet further east than at first intended; we shall now have ample room for tackle, &c., and we shall also by this means prove the value of this counter branch in depth.—Dressing: The dresser is about the leadstuff.

CWM ELAN (NEW).—W. Goldsworthy, June 9: The engine-shaft is down 9 fms. under the 30; the lode therein is looking well, and maintains its value as per last estimate. The appearance of the lode indicates that we shall meet with good results in our next levels. The 30 west has fallen off in value since last report, though still producing some fine stones of lead ore. This seems to be only a temporary change. No. 1 stope in the 30 east, on the north lode, is worth 18 cwts. of lead ore per fathom. No. 2 stope will produce 10 cwts. of lead ore per fathom. The stope on the south lode will produce 10 cwts. of lead and the same of blende ores per fathom. The stope in the back of the 30, west of shaft, is worth 7 cwts. of lead ore per fathom. The stope in the 20 west will yield 8 cwts. of lead and 10 cwts. of blende ores per fathom. The stope in the same level east, on the north lode, will produce 9 cwts. of lead ore per fathom. I have sent you samples of our parcel of lead ore, and trust you received them all right. We have, in addition to the lead ore, 15 tons of blende ore cleaned in the bin.

CWMYSTWITH.—June 11: Michell's lode, in Michell's level west, has fallen off in value since our previous report. The end is now worth 10 cwts. of lead ore per fathom, but still very promising. The part of the lode being taken down for 2 ft. wide in the east end is still poor, but we shall strip down more of the lode by the end of the week. We have not cut anything of value in the cross-cut at the 12, but have driven through the lode, consequently suspended the driving north, and placed the men to drive east on the course of the lode for a few days, to prove if it will open out or not, as we have a nice orey lode only 12 fms. under this. The winze sinking under Michell's level and Gill's upper level east, both on the new lode, are poor. The rise in the back of the Rosa level, on the new lode, is worth 11 cwts of lead ore per fathom. The stope in the back of Michell's level, west end, on the new lode, is worth 10 cwts. of lead ore per fathom. The stope in the back of Michell's level, 16 fms. west of rise, on the new lode, is worth 15 cwts. of lead ore per fathom. The stope in the back of Michell's level east, on the new lode, is worth 10 cwts. of lead ore per fathom. The wide stope at Level Fawr, on the copper lode, is still worth 12 cwts. of lead ore per cubic fathom. The stope in the 24 fm. level, over Level Fawr, on the Kingside lode and branches, is 9 ft. wide, worth 15 cwts of lead ore per cubic fathom. Our tributers are getting fair wages. The dressing is being pushed on as fast as possible. We have not done so much at the new machinery on the slime floors during the past week as we expected, as the carpenters and smiths were engaged three days in repairing and changing rolls at the crusher. This is now in good working order.

DE BROKE.—J. Phillips, June 13: The lode in the 45, east of Wilson's shaft, is 4 ft. wide, composed of killas and crystallised quartz, enclosing fine patches of lead ore, a saving mixture. When the drivage is sufficiently advanced, we shall commence a level west from shaft, where the lode is large and encouraging. In the 35 east we are cross cutting under the winze from the 25, which is suspended for the time on account of water. The stope in the roof of the 35 west will produce 22 cwts. of lead ore per fathom. A trial stope in the roof of the 35 east will produce about 7 cwts. of lead ore per fathom, and likely to improve. The stope in the roof of the 25 will produce at least 2 tons per fathom. In the stope at the junction two men are fixing timber and clearing orestuff. Other points are without alteration. I intend to sample 20 tons of lead ore on Saturday or Monday next.

D'ERESBY MOUNTAIN.—W. Bennetts, June 13: The lode in the deep adit level is 15 in. wide, producing some good saving work for lead and blende. We have fixed the launders at the intermediate level so as to bring the water down the winzes which have been sunk in the bottom of the level, where the men who worked in the winzes last say there is a fine lode of lead to be seen as soon as the water is driven down.

DENBIGH HIRE CONSOLIDATED.—John Pryor, June 14: The rise that we are putting up in the back of the 112 east shows a very decided improvement; the lode is widening and becoming more promising every day. We have ore scattered through a width of 3 ft. for the length of the rise. No lode has been cut in the north cross cut at the 112 west at present, but appearances are all that could be desired. The tributors in No. 1 rise are doing well; the ore seems to be making up faster than we anticipated. This may throw a new light on this run of ore. Parry's Shaft: The new sump below the 40 is progressing well. We have commenced to find ore in the new sinking, whereas at the same depth in the old sump, which is within 10 yards of us, no lead whatever was seen. The diallings here are being checked; we know what course to pursue now to get through to the west level.

EAST CARADON.—James Kellow, Thomas Trelease, June 13: Williams' shaft was sunk 4 ft. 6 in., completing the contract of 4 fms. for 20*l.* We have re-set the shaft to sink 8 fms. stent, by nine men, for 40*l.*; this will complete it to the required depth for the 150 fm. level; the ground is without change, being hard elvan. We have driven the 130 west, from sump winze, 1 fm. 3 ft. with the hope of reaching a small cross course, and have re-set the same to nine men, 1 fm. stent, at 18*l.*; when it is intersected we expect it will facilitate our progress in driving north towards shaft. To drive the 130 east, on caunter, 1 fm. stent, by two men, at 14*l.*; it was driven 3 ft. 9 in.; the lode is 2 ft. wide, composed of quartz, peach, and mundic, intermixed with spots of ore; the ground by the side is granite. To drive west of eastern cross cut, on south part of Child's, 1 fm. stent, by four men, at 12*l.*; it measured 1 fm. 3 ft.; the lode is small, composed of peach, quartz, and spots of ore. To stope the caunter in the bottom of the 90, 3 fms. stent, by two men, at 2*l.* 15*s.*; it measured 2 fms. 4 ft. 3 in., yielding 2 tons of ore per fathom. No. 1 stope in the back, on Child's, 7 fms. stent, by four men, at 2*l.* 5*s.*; it measured 5 fms. 1 ft. 6 in., yielding 2½ tons. No. 2 stope, 5 fms stent, by four men, at 3*l.*; it measured 4 fms. 3 ft. 6 in., yielding 2½ tons. We are stoping a branch below the 80, by two men, where it will yield 1 ton. Six tribute pitches were set, each to two men, for one or two months, at tributes from 12*s.* 6*d.* to 14*s.* 4*d.* in 1*l.*

EAST DARREN.—June 12: The 130, west of Skinner's shaft, has been driven during the past month 1 fm. 1 ft. 9 in. in the lode 4 ft. wide; unproductive for lead ore; this point is now suspended, and the men put to drive the 130, east of shaft, in a lode 3 ft. wide, containing branches of lead ore; saving work for the dressing floors. The 130, west of Lewis's winze, has been driven 2 fms. 4 ft. 3 in. in a lode 5 ft. wide, easy for exploring, but unproductive for lead. A winze under the 1-4, 130 fms. east of Taylor's shaft, has been sunk 2 fms. 2 ft., and communicated to a drift for ventilation, and laying open tribute ground; the lode being large, and yielding 10 cwts. of lead ore per fathom. The 94, west of cross cut, on north part of lode, has been driven 5 ft. in a strong lode, yielding from 7 to 8 cwts. of lead ore per fathom. In the stope in the bottom of same the lode is large, yielding from 8 to 10 cwts. of lead ore per fathom. The cross-cut south at the 80, 100 fms. east of Taylor's shaft, has been driven 1 fm. 3 ft. in ground stiff for exploring, composed of a light clay-slate, beds of grit, and branches of carbonate of lime, showing occasionally small spots of lead. The cross cut south at the 80, 60 fms. east of Taylor's shaft, has been driven in the lode 1 fm. 10 in., which was stiff for progress; yielding good branches of lead ore, and have extended the level west of same 3 ft. in a lode yielding 1 ton of lead ore per fathom. The 80 east, on south part of lode has been extended 1 fm. 6 in. in a lode 5 ft. wide; yielding from 1 to 1¼ ton of lead ore per fathom. The tribute pitches throughout the different levels (six in number) are without change to notice. Our machinery is in good working order. Drawing and dressing progressing favourably towards preparing ore for our next sampling.

EAST VAN.—Wm. Williams, June 13: Tempest shaft is sunk 9 fms. 2 ft. below the 25. The level on the branch or south part, west of Tempest shaft, is improving, and from present appearances we may cut into a course of ore at any time. The 25 west is without particular change. The lode in the eastern side of cross-cut A has improved to-day for lead.

ELGAIT.—J. G. Green, June 13: No 1 winze, in course of sinking below the adit, has improved during the last day or two—present value fully 1 ton of silver-lead ore per fathom for length of winze, 7 ft., and I quite expect, looking at its kindly appearance, still further improvement. The composition of the lode is all that can be desired for ore, but is hard and short for progress. I have just forwarded per passenger train a stone of ore broken from the bottom to-day, which will speak for itself. No other change. Machinery working well.

GAWTON COPPER.—George Rowe, George Rowe, jun., June 9: There is no change to notice in any of our points of operation during the past week, except in the 95 east, which is improving, with good stones of ore. The new discovery on the south lode at the 105, both east and west of cross cut, is still maintaining its former value of 20*l.* and 30*l.* per fathom, and looking exceedingly kindly. We shall shortly be in a position to extend a new cross cut at the 95 above to intersect the same course of ore.

GLASGOW CARADON CONSOLS.—W. Taylor, W. J. Taylor: The sinking of the new shaft below the 78 is being pushed on as fast as possible, and fair progress is made. In the 78 east the lode carried is worth from 12*l.* to 15*l.* per fathom; ground and lode harder. Cutting south at this level we are still meeting with branches all containing more or less ore, with evidently more lode still ahead. We have just commenced to drive east in the branch lately cut here, which is worth about 7*l.* per fathom. We shall drive west as soon as there is room. No change to notice in the mid-way, or 65, on Harvey's north lode. Arrol's lode in the 55 west is worth 6*l.* per fathom. The counter lode in the 52 east is very little changed; the lode is chiefly mundic and ore west; worth 5*l.* per fathom. The stopes and pitches are about the same value as last reported. Surface Work: The whim engine is all on the ground, and the masons are getting on rapidly with the building of the house, &c. We sampled yesterday last month's ore, computed 250 tons, which will be sold on the 21st inst.

GLENROY.—R. Rowe, June 9: Setting Report: The engine shaft to sink below the 60, by four miners and four labourers, at 22*l.* per fathom. The 50 rise, by two men, at 6*l.* per fathom. The 40 sole, by two men and two labourers, at 7*l.* per fm. The 40 rise, by two men, at 4*l.* per fathom. The 25 cross cut, by two men, at 10*l.* per fathom. The adit level north, by two men and two labourers, at 4*l.* 15*s.* per fathom.

— June 12: I have now returned from the mine. The shaftmen have finished the tip lodge, and will to-night complete penthouse over their heads, ready to resume sinking to-morrow morning; where we have cut out the tip lodge the lode is 10 ft. wide. In the 50 rise the lode is about 2 ft. wide—a good mixture of blende. In the 40 sole the lode is about the same size, containing a good rib of blende for about 8 in. wide. We are anxious to hole this ground between the two levels to improve the ventilation. In the roof of the 40 we are also rising for a small object; the lode in the rise is about 18 in. wide, producing some good stuff for blende. In the 25 cross-cut we have intersected some promising branches, and have more water. The lode in the adit level driving north is 5 ft. wide, and to-day looked more promising than I have seen it for some time past, yielding some blende, and letting out a great quantity of water.

GLYN.—James Roach, June 12: Since my last advice in squaring down the north ground in the engine-shaft for the reception of timber the footwall of the lode was discovered. On this we have some very kindly matrices, carbonate of lime, sulphur, and strong spots of lead and blende. The lode in the bottom of the shaft has an altered appearance to that seen in the levels above. Therefore, I have no doubt when we drive east and west on the line of the lode very valuable discoveries of ore will be made. But before doing so the local directors and myself have thought it judicious to deepen the shaft 7 or 8 ft. for leavers and cistern, as well as a loom to receive accumulating water. We have foul air in the winze under the 28 west, which is suspended until we fix the new machine and pipes therefrom for ventilation. The stope in the roof of the 15, east of shaft, is still producing lead in paying quantities.

GOGINAN.—June 13: Setting List: The 130 to drive east of western shaft; the lode is large, and the portion carried is yielding good saving work—a kindly lode. The same level, west of western shaft, is suspended for the present, and the men put to rise over the level for ventilation, and to open out the ground for stoping. To rise over this level, 11 fms. west of western shaft; the lode here is worth 14 cwts. of ore per fathom. A winze to sink below the 120 fathom level, 70 fms. west of Bryn Pica shaft; here the lode is producing 12 cwts. of ore per fathom. Stripping down the lode to the full width about 70 fms. west of Bryn Pica shaft in the 120; suspended, and the men put to sink a winze below the level. A winze below the 110, 55 fms. west of Bryn Pica shaft, is suspended, and the men put to rise from the 120, against the same. To rise over the 120, 5 fms. west of Bryn Pica shaft; the lode here is worth from 10 to 12 cwts. of ore per fm. To stope and strip down the lode to the full width in the 120 fm level, 45 fathoms west of Bryn Pica shaft; the lode is 9 ft. wide, and will produce 14 cwts. of ore per fathom. In a stope over the 120 fm. level, 11 fms. west of western shaft, the

lode will yield 18 cwts. of ore per fathom. The 100 to drive east of Bryn Pica shaft; the lode is 4 ft. wide, showing occasionally spots of lead and copper ores. A pitch over the 100, 20 fms. west of Taylor's shaft, is yielding 8 cwts. of ore per fathom. In a pitch below the 100, 10 fathoms west of western shaft, the lode is 6 ft. wide, producing 13 cwts. of ore per fathom. In a pitch over the 100, 10 fms. west of western shaft, the lode is 4 ft. wide, worth 7 cwts of ore per fathom. A pitch over the 110, 12 fms. west of western shaft, is producing 13 cwts. of ore per fathom. At surface everything is being pushed forward as fast as possible, and the 90, with all the necessary shafting, pulleys, &c., is fixed; and immediately we receive the elevator and separator they will be put up quickly and the jig set to work. We have the stone-breaker fixed in its place, and are now proceeding with the necessary gearwork for driving the same, and also repairing water wheel.

GORSEDD AND MERLLYN.—W. Edwards, June 14: In the driving east from the bottom of the new shaft the run of ore from above is not yet intersected, but appearances are very favourable. In the driving west the vein maintains strength and character. In the No. 1 sump driving east the lead looks splendid. No. 2 sump is being sunk to meet the west level from the shaft; we are going down through a good course of ore. We have a full force of men at all these operations.—Gorsedd Lode: The ground in the east level looks promising for an early improvement. From the new shaft in Lady Fielding ground the men are driving east; the ground looks very nice. We have to day sold 50 tons of lead ore at 14l. 10s. per ton. Lead is lower than at our last sale, but we stood at the head of the list by 15s. per ton. The mine continues to open up well in a very satisfactory manner.

GREAT DYLIFFE.—Evan Evans, June 12: Dyliffe Lode: At the 132, east of engine-shaft, there is no important change to report; we have not commenced stripping the lode, the ground being harder. The communication with the winze was not effected so soon as we expected last week. We shall be able to value the lode in this level next week. We have tried the 45 east at the lode to-day, and from its present appearance I think we are nearly under the place where some years ago a good bunch of ore was taken from the level above this.—Llechwedd-du Lode: The stopes in the back of the 105 east are looking better than when last reported. The value of stope No. 1 is about 20l. per fathom; the other two stopes are worth about 13l. per fathom.—Esgaergaled Lode: The stripping at the 45, west of cross-cut, is still looking very promising.

HOLMBUSH.—H. Bennet, June 14: The shaft-men will finish fixing the new lift this week, when they will at once resume sinking and cleaning up the shaft. There is no alteration in any of our tutwork bargains. All the stopes are looking well, and yielding first rate arsenical mundic, and good stones of copper ore. We shall fork the attle at the 60 (Lord's shaft) this week, after which we shall commence to clean up this shaft below the 60, in order to sink to the 80 as fast as possible. The machinery is in good working order. Next Saturday being our monthly setting, a full report shall follow.

HINGSTON DOWN CONSOLS.—T. Richards, June 14: In Bailey's shaft the change of pitwork referred to in last report has been completed, and sinking is again progressing in a very satisfactory manner; the lode in the present bottom is more porous, very large, fully 5 ft. wide, exceedingly promising, and is worth for length of shaft 20l. per fathom. The stope in the bottom of the 160 west is worth 6 tons, or 20l. per fathom. The lode in the stope in the back of the 160 west is worth 5 tons, or 15l. per fathom. In the 140 west, on the south part of the lode, the lode is worth 5 tons, or 20l. per fathom. In the stope in the back of the 140 west the lode is worth 5 tons, or 15l. per fathom. In the 140 west the lode continues to produce rich stones of ore, and is promising. In the stope in the back of the 140, west of Chynoweth's rise, the lode is worth 5 tons of ore, or 20l. per fathom. In the 120 and 110, on the south part of the lode, are without any important change.

KINGSTON CONSOLS.—J. Chynoweth, June 14: Spare progress has been made in driving the 40, west of engine-shaft; the lode is large, and very wet, composed of spots of lead, blende, copper, quartz, and capel, and very promising for a speedy improvement. Good progress has been made in driving the 30, west of the engine shaft; the lode is large, and very speedy, at the present time unproductive, but of a promising character. In No. 1 winze, sinking in the bottom of the 30, no lode has been taken down since last report. In No. 1 stope, in back of the 18, the lode is worth 5 cwts. of lead and 18 cwts. of blende per fathom. In No. 2 stope, in the back of the 18, the lode is worth 4 cwts. of lead and 20 cwts. of blende per fathom. In No. 3 stope, in the back of 18, the lode is worth 5 cwts. of lead and 12 cwts. of blende per fathom. In No. 4 stope, in back of the 18, the lode is worth 18 cwts. blende and 5 cwts. of lead per fathom. In No. 5 stope the lode is worth 3 to 4 cwts. of lead and 14 cwts. of blende per fathom. In stoping and driving on the south lode, in the 18, the lode is worth from 5 to 6 cwts. of lead per fathom. In No 4 winze, sinking in the bottom of the 18, the lode is worth 30 cwts. of blende and 6 cwts. of lead per fathom for the length of the winze. In the rise in the back of the 18 the lode is worth 15 cwts. of blende and 4 cwts. of lead per fathom for the length of rise. We sample to day—No. 1 blende, 50 tons; No. 2 50 tons; to be sold on June 21. All machinery giving good satisfaction.

LADYWELL.—A. Waters, June 14: The 32, south of engine shaft, is now up to where the two parts of the lode are in junction—hence there will be no need to cross cut west, as mentioned in last report. The lode is yielding stones of ore, but not to value. The 16 south is in a lode 4 ft. wide—soft ground, with loose lumps of blue and a slight mixture of carbonate of lead. This is the commencement of the ore ground seen at the adit. The tribute stope at the adit is now 15 fms. above the level, and the men are carrying a stope 10 fms. in length, leaving good orestuff in the ends as they go up. We calculate on having 20 or 25 tons of lead ore from this pitch during the present month. Owing to the heavy rains last week we had to suspend the new south shaft for several days. The men are now sinking again, and the water seems to be falling off considerably; good stones of lead ore are found in the lode here, 8 fms. from surface. We must look out for a small portable engine for winding, &c., out of said shaft, in order to push the sinking.

MARKE VALLEY.—Wm George, J. Stenlake, June 14: In our last report we said we had intersected a branch in the 60 cross cut south (about 6 in. wide), which has since turned out some very good ore, but is underlying south very fast; and the ground beyond it being intermixed with copper and mundic confirms our opinions that it is not the main part of the lode; we, therefore, continue the driving in that direction. The lode in the 50 end is without any material change. The 40 end is opening out profitable ground, yielding full 3 tons of ore per fathom, and very favourable for driving. In the 30 end the lode is changeable at times, yielding some very good work, but at present rather troublesome for driving through. In the 10, driving west, we are opening out fair tribute ground.

MELLANEAR.—John Gilbert, June 13: There is no change to notice in the 50, west of the skip-shaft; the lode is still 2 ft. wide, and producing good stones of copper ore. The lode in the 67, west of the shaft, will produce 2 tons of ore per fathom. The lode in the No. 2 rise, in the back of this level, is worth 4½ tons of ore per fathom. The lode in the No. 3 rise, in the back of this level, is worth 5 tons of ore per fathom. The lode in the 90, west of shaft, is worth 3 tons of ore per fathom, and the ground is favourable for driving. Gundry's shaft is now down 4½ fms. below the 80, and the shaftmen are making very good progress with the sinking. The lode in the 80, west of Gundry's shaft, is just the same as last week, still worth about 2 tons of ore per fathom. The 70, east of shaft, is producing good stones of ore, but not sufficient to value. There are now about 10 fms. to drive to communicate this end with the 67, west of the skip-shaft. The rise in the back of this level (the 70) is worth 3½ tons per fathom. The 70, west of shaft, is worth 3 tons per fathom. The 60, east of shaft, is worth 2½ tons of ore per fathom; and the 60, west, 4 tons of ore per fathom. We shall sample, on Tuesday next, about 340 tons of copper ore.

MONYDD GORDDU. Richard Rowse, June 13: Since my last week's report we have cleared the stuff from the 24, taken the 7 in. lift of pumps to the adit, put in stays about the 10 in. lift, and stronger bearers for the sinking screw, &c., and this afternoon start to sink and cut lodge, &c, and will push on as fast as possible towards the 30, which should be reached at the earliest moment, as the prospects there are most encouraging. We have also opened a little on the branch going off nearly north, and find it continues leady, and promises improvement. This point should have immediate attention as soon as the shaft is down out of the way, the lodge cut, lift put in cistern, skip-road down, &c., as I am of opinion that this branch is a flyer from the north lode, 12 fms. off, which will be found productive when reached. I have nothing fresh to report in other points of operation. We are pushing on with drawing, dressing, &c., and shall send off 8 tons of lead early next week.

NEW TYLLWYD.—J. Harris, June 14: The lode in the 30 fm. level, driving west on south lode, is about 1 foot 8 inches in width, composed of clay slate and spar, with a little lead—water issuing freely from same. The lode in the 20, driving east on south lode, is about 2 ft. wide, composed of clay slate and carbonate of lime—a little water issuing from same. The lode in the back of the 20 is being stoped by four men west of cross cut on south lode; improved during the week, and is at present looking very encouraging. The lead seems to be distributing itself throughout in larger quantities and of a more solid nature; the lode will average in width about 1½ ft. The lode in the winze is being sunk in the bottom of the adit level on south-west branch, and is about 2 ft. wide, composed of slate, with a leader of spar and lead running through the centre of same; lode seems to be taking a more downright or perpendicular direction.

NORTH CORNWALL.—Thomas Doidge, June 9: I find that the man who is raising stones from the quarry has met with small branches, evidently going into the lodes. These branches produce good stones of lead in the quarry, and lead against the faces of many of the quarry stones. As these branches will meet the lodes in depth this is another strong indication of the lodes being productive in depth and at the point where these branches strike the lodes, for if small branches produce lead so shallow, what may fairly be expected at a proper depth.

NORTH LAXEY.—R. Rowe, June 8: Setting Report: The engine-shaft to sink below the 136 (now down 7 fms. 4 ft.), by four men and four labourers, at 3l. per fathom. The 121 stope north, by four men and four labourers, at 5l. per fathom. The 110 stope north, by two miners, at 5l. per fathom. The 70 cross-cut south, by two men and two labourers, at 10l. per fathom. The 60 stope in the sole south, by two men and two labourers, at 4l. per fathom. The 60 stope in the roof south, by four men and four labourers, at 5l. per fathom. The 50 stope in the roof south, by five men and five labourers, at 3l. 10s. per fathom. The 40 sole, by two men and two labourers, at 3l. 10s. per fathom. The 40 end, by one man and one labourer, at 7l. per fathom.

R. Rowe, June 11: The north engine shaft is now down 7 fms. 4 ft. below the 136, and from present appearances I expect the sinking will go on with increased speed, as the lode, which is now about 2½ ft. wide, is very loose and open, and in the cavities containing a good deal of fine lead. If appearances go for anything we should be near a good course of ore. The stopes are much the same as reported last week, excepting that on the new lode in the 60 south, which is now the best I have seen in the mine, and is worth 2 tons to the fathom at least. There is now 12 ft. of rock between this and the old 60. We are cross-cutting for this in the level below the 73), and are in 12 ft., and by the nature of the rock are nearing the lode. In the 60 the new lode is taking a more downright course than the old lode, the cross-cut, therefore, will be longer in the 70. If we are fortunate enough to cut here a similar lode as we have in the 60 I shall feel that the success of the mine is pretty nearly safe, if not altogether so.

OLD TREBURGETT.—W. Hancock, W. T. Bryant, June 13: Masey's shaft is communicated to tribute pitch below the 40; lode 3 ft. wide, worth 8l per fathom. We are sending away the last parcel of ore sold. Full report next week.

PANDORA.—H. Nottingham, June 13: New Lode: The 33 end, going south, has undergone no change calling for remark since last reported, the end being very wet, and slow of progress. The 33 cross-cut, to cut Goddard's lode, is making satisfactory progress. The 23, driving south, is showing a strong mixture of lead and blende, but scarcely enough to value. No. 1 stope, over this level, is producing 15 cwts. of lead and same of blende to a fathom. No. 2 lengthening toward the end is getting into more blende as it goes south, and less lead, the same as we had it in the level. We shall shortly take another stope over the back of this, which will produce more lead. The 13, going south, is at present standing, being obliged to take the men to the bottom level.—Goddard's Lode: The stope in the 23, north of No. 1 shaft, is worth 8 cwts. of lead and 10 cwts. of blende per fathom. The stope north of No. 3 shaft is worth 10 cwts. of lead and a little blende per fathom. The stope south of No. 3 shaft is worth 10 cwts. of lead and the same of blende per fathom. The stope south of No. 4 shaft is worth 5 cwts. of lead and 10 cwts. of blende per fathom. In No. 5 shaft we are stripping down the lode which was left standing on the east side of the shaft, and find it still to be underlying west; it is strongly mixed with blende and a little lead, but not to value.—Surface: On the dressing-floors we are making the usual progress. Our next sampling of blende, which will be on Monday, will be more than our usual quantity. We have finished raising and levelling the banks of the reservoirs, and put them all in good condition. The large reservoir is still full, and the others nearly so.

PARYS MOUNTAIN.—T. Mitchell, June 13: The ground in the 90 south has become a little easier and better for cutting after passing through the branch referred to in my last. In connection with the branches recently passed through we find occasional patches of copper ore and sulphur, which we consider a favourable indication. The stopes and pitches are yielding much as usual. We sample to-morrow about 280 tons, including precipitate.

PATELEY BRIDGE.—C. Williams, June 14: The Rake vein in the 30 east is opening out very satisfactorily; the bearing part is 4 ft. wide, and produces 1½ ton of ore per fathom, and from all appearances we shall have a long length of profitable ore ground to work away over this level; the ground is congenial and easy to work, and good progress is being made. The 30 west is opening out a fine masterly vein, several fathoms in width, and carrying a leader of ore on the north wall, worth 1 ton per fathom, letting out water in abundance, and the ground is favourable. In No. 1 winze on Rake vein, in the 20 west, we have completed cutting ground for plat, &c., and have sunk about 2 ft. under the level; we have not, however, been able to take down any of the vein as yet, but have pricked into the south wall about 6 in., which shows good ore; further particulars in my next. In the south cross-cut in the 20 west, to cut Lumb vein, we have cut into more water in the end to-day, which is a good sign that we are close upon the lode. Fielding's vein, in the 20 north-west, is 4 ft. wide, and produces 1 ton of ore per fathom. The Sun vein going east, from bottom of shaft under Gillfield level, is becoming very large and well defined, principally composed of carbonate of lead, quartz, and blue ore, yielding of the latter 25 cwts. per fathom. I enclose particulars of our last sale of pig-lead.

PATTER SYKE.—John Peart, June 9: In driving the Horse level south in Chargill head vein we have come in contact with some more east and west strength that has caused the cross-vein to be shifted to one side. We are now making a cross-cut to the west, and have very strong indications that it will be laying off in that direction, and may be cut in a few days. In driving the last 12 fms. we have cut several east and west veins, but instead of making a rich mine, as there was every reason to expect, they have shifted the vein out of its course, and in some cases caused it to be divided, but I hope when found this time that it will contain good ore. It has been very rich north from our present level, and if we were clear of the confusion and trouble we may soon have a rich mine again.

PEDN-AN-DREA CONSOLIDATED.—W. Tregay, Wm. Priteaux, John Pope, June 14: The mines continue to look well, and to produce their usual quantities of tin. We sold May 2's to the Cornish Arsenic Company, 15 tons of arsenic, for 61l 10s. We sold from the 10th to the 30th of May 35 tons 15 cwts. 3 qrs. 25 lbs. of black tin, for 1528l. 5s. 2d. We sold on Thursday, June 7, at Carvedras, 10 tons 12 cwts. 1 qr. 13 lbs. of black tin, at 42l. 5s. per ton, worth 448l. 12s. 6d. We have about 10 tons of tin cleaned up and ready for sale this day.

PENNANT.—June 14: The shaft is now cased and divided from the surface down to the 80 yard level. We have also the ground cut at the latter level for the tram road and turntree; indeed, it is now a good pit. We have started sinking, and at 6 ft. lower we shall fix the cistern for the lift, after which I think we shall go down well to the 100. In the 80 driving east the ground is much better for progress; a good indication, seeing that we must now be approaching the runs of ore seen in the upper levels. The 60 stope east is producing stones of lead.—South Lode: I have placed men in the 20 yard level west of boundary shaft; this is going back west in whole ground, and is producing some splendid lead ore. On the east side you are aware that this lode produced great quantities of ore, and where we are working I can assure you the appearances presented are very good. We are drawing and dressing as fast as possible.

PERKINS BEACH.—S. M. Ridge, June 14: In compliance with your request of the 12th inst., I now furnish you with further particulars respecting the sinking of the new engine-shaft. My object of late in recommending the stripping and enlarging of the old ventilation shaft sunk from surface down upon the adit level, 60 fms. to the east of the adit level entrance, was this—we should not have so far to drive out our levels at the different lengths of sinking the shaft to meet with the runs of ore worked upon in the old eastern workings; this was the reason I recommended doing so, but we should have to strip and enlarge the adit level for more than 65 fms. in length from the entrance, and to cut a good lodge at the level, and put in launders and pipes to carry off the water, and lay down a good tramroad from the shaft to the flooring; we should also have to make a new road on surface to the shaft. All this would require more time and money than you anticipated. If it is the intention of the directors to work this mine properly, and to open it up in a good, sound, practical, miner like manner, I shall not deviate in the least degree from my former advice and opinion—that is, I strongly recommend the sinking of a good, new, and permanent engine shaft near the entrance of the deep adit level. We should only have 5 fms. 3 ft. to sink from surface at this point to come down upon the level. Then I propose to sink down below the level upon the great spare lode, and to sink the first length of the shaft 20 fathoms before driving out, and afterwards I propose to drive out both east and west of shaft at every 15 fms. length until the shaft is down to the depth of 65 fms., instead of sinking the shaft in three lengths of 20 fms. each, as proposed on plan and section. When the shaft is sunk to the depth of 65 fms. I strongly advise to drive out your levels both east and west of the new shaft, upon the great spare lode, extensively, to the junction of the caunter lodes crossing, at which point I fully expect large deposits of lead ore will be found. Besides which, I would strongly advise a cross-cut to be put out at the 65 fm. level, both north and south of the new shaft when down, to intersect the side lodes running parallel with the great spare lode. If this work is carried out properly, and in a spirited, miner like way, there is not the slightest doubt in my mind that a great and lasting lead mine will be opened up which would speak for itself by returns of ore. I consider the steam-engine at work upon the present shaft would be of sufficient power to pump and wind, and take the new engine shaft down 80 fms., unless a feed of water unseen as yet were cut, but I would advise a new boiler, a little larger than the present one, should be fixed with the engine when moved, then we should be safe for working the mine effectually. A sufficient quantity of stone can be raised close to the spot where I propose to fix the engine-house, and there is a good road to and from the same place to carry coals to the engine, and the proposed new shaft will be in the proper place to command the mine for many years to come, and at the head of the dressing floors. We have four men driving the 70 east upon the course of the new lode recently cut, but the ground continues strong and hard for driving. The tribute pitches are looking poor, consequently the men are raising but little ore. We have six men taking down and bringing out the underground engines, and they are making fair progress in bringing them to surface, but have a very difficult job to get a part of them up. We have 2 tons 5 cwts. of ore dressed up in the bin, and about 1 ton broken underground.

PLYNLIMMON.—J. Garland, June 13: The following bargains were let on Friday last: The new shaft to sink to the required depth for a 36 fm. level, to nine men, at 20l. per fathom; the lode is of a very promising character, with a well defined footwall, and produces occasional stones of lead ore, and good progress should now be made in sinking. Jones's winze has been let to nine men to sink below the 24 18 fms. east of shaft, at 16l. per fathom; the lode, which is wet and troublesome for sinking, shows nice spots of copper and lead ores, but not sufficient to value. This winze is down 7 fms. 0 ft. 6 in. Herbert's winze, about 35 fms. east of last-named, has also been let to nine men, at 15l. per fathom; the lode at present is small and compact, producing about 10 cwts. of lead ore per fm. Present depth of winze 7 fms. A stope in the back of the 24, east of new winze, by six men, at 4l. 10s. per fathom; lode produces 10 cwts. of lead ore per fathom. A stope in the back of the 24, east of last named, is let to 10 men, at 4l. 10s. per fathom; lode yields full 1 ton of lead ore per fathom. The stope in the bottom of the 12, east of cross-course, being poor, is suspended. Drawing and dressing are being pushed on as fast as possible, with a good supply of water. The mine is in fork, and the machinery throughout in fair working order. We shall forward invoices of last parcel of lead ore in a few days.

PRINCE OF WALES.—J. Andrews, June 13: The lode in the stope in the bottom of the 75, west of cross-course, continues to open out very well, and is still worth 15l. per fathom. The tribute pitches are, on the whole, looking well.

RELISTIAN CONSOLS.—J. Curtis, June 14: The ground in the 24, east of Duke's shaft, is spare for driving, with no material change in the lode. The men in the end have just finished stripping down the lode in the south side of the level, which contains a little tin, but not enough to value. The stopes are turning out their usual quantity of tin.

SAINT PATRICK.—Wm. Francis, June 13: I am much pleased to report continued improvement in all points of our operatson, especially so in those at the 120 yards level, at which driving northward the cross-course is now opened to from 3 ft. to 4 ft. wide from roof to side of level, composed of clay, spar, and other congenial matrix for the existence of ore deposits close at hand. In driving west on this vein from this cross cut the white stone is just coming in at the sole of the level, producing spar and lead ore at the joints, more than yet seen since the driving was commenced. The ground in the 60 yards cross-cut north is at present somewhat harder for driving, but the measures are most desirable, as promising for lead ore deposits.

SOUTH CONDURROW.—Wm. Rich, Wm. Williams, Hy. Abrahams, June 12: The lode in the 93 west is worth 7l. per fathom. We have suspended the winze in the bottom of the 82 west, as it is sunk deep enough to meet the 93 end when it driven forth to it. The 82 end east is worth 8l. per fathom. The 70 west is worth 10l. per fathom. The rise in this level is worth 12l. per fathom. The 60 west, on West Basset lode, is improved, now worth 8l. per fathom, and the ground easy for driving. The great lode in the bottom of the 60 west is worth 15l. per fathom. The 50 west yields low quality tinstone. The 50 east is worth 10l. per fathom. The rise in the back of the 50 is worth 9l. per fathom. The 40 east is worth 7l. per fathom. The 40 west is worth 7l per fathom. The Plantation shaft is made complete to the 20, and ladder-road fixed; the men are now engaged cutting plat.

SOUTH DARREN.—H. James, A. Gundry, June 13: There is no change to notice in the 90 forebreast since last report. No. 1 stope, in the back of this level, is worth 27l. per fathom. No. 2 stope is worth 9l. per fathom. A stope in back of the 80 is valued at 8l. per fathom. A stope in the roof of the 70 is worth 7l. per fathom. We are again drawing stuff from the 90. All the machinery working as usual.

SOUTH ROMAN GRAVELS.—John W. Powning, June 13: We got the mine in fork and driving resumed at the 45 on Monday morning. Good progress is being made in both ends, but there is little change as yet. I will keep you posted as to any changes that may take place. Everything in connection with the engine works well.

SOUTH TOLCARNE.—W. Rich, W. Hambly, June 12: The rise in the back of the 50, on Fraser's lode, is holed to the 40. This conclusively proves that the 50 has been driven on the same lode as that driven on at the 40, called Fraser's lode. The rise referred to carries a little tin. We have resumed driving the 50 east, which is yielding good stones of grey copper ore. Good progress is being made in the 50 cross cut north towards the tin lode, also in sinking the trial shaft in the eastern part of the sett.

TANKERVILLE.—Arthur Waters, June 14: Watson's shaftmen have driven the cross-cut south, towards the main lode at the 192, 7 ft., and we expect to reach the object in 2 fms. further driving. It is confidently expected that a rich course of ore will be met with at said level. We are getting on well with opening out for plat at the 192. The 180, east of shaft, is into a point where the lode is in two division, the footwall portion being worth 1 ton, and the hanging wall part 3 tons per fathom. The winze below the said level, east of shaft, is worth 4 tons per fathom. The 180 west is in a lode 5 ft. wide, worth 3 tons per fathom. These ends are now 33 fms. apart. The winze below the 180, west of shaft, is worth 4 tons per fathom. The stopes and other points as reported last week. We have to-day sold 125 tons of lead ore for 1703l. 2s. 6d.

TANYRALLT.—J. Davies, June 14: We have been driving alongside the lode in the 24, so as to be able to keep the lead from the waste, and shall continue to do so for another fathom. The stope north continues as before. Crushing and dressing going on as usual.

TOLGUS CONSOLS.—W. C. Vivian, June 15: I find to-day the lode in the 25 end, west of the cross course, more consolidated than it was before for a width of fully 2½ ft.; in fact, it is now one lode in the place of a belt of branches. It has strong good quality yellow copper ore more or less in every part of it, and there is a nother quartz coming into the end from the back and the north, accompanied by a light-coloured killas rock in place of the flinty horn-blende which we have hitherto had. I like the appearance of the lode, quartz, and adjacent rock better to-day than I have before done since we started away from the cross-course.

TREBEIGH CONSOLS.—J. Gifford, June 13: The lode is not met with in the cross-cut as yet—*i.e.*, in my opinion, for I cannot believe that such a large, strong, and kindly lode as seen in the adit level and in the shaft sunk on its course would take such change in size, strength, character, and flat underlie, as either of the two branches that have been driven through in the cross-cut, for the character of the lode when seen above is far more likely to take a more perpendicular dip than a greater underlie, and if it should have gone more perpendicular—say, to 1¼ ft. in a fathom, which is not at all likely, particularly so as the water still flows freely from the end, and it is my firm opinion the main lode is still ahead of the cross-cut. Taking into consideration the branches not within the shaft, and gone off a little south of it, which produces both blende and silver-lead ores, and which must fall in with the main lode in going west and in depth, I am still sanguine that Trebeigh Consols is a good property, although it may take more money and time to prove it. The cross-cut is in 15 fms., and the shaft is down 4½ fms. below the 30, and the plunger fixed and completed from the 30 to surface.

TRELEIGH WOOD.—E. Hosking, W. Goldsworthy, June 14: The men are making good progress in driving the 34 west, where the lode is still worth 10l. per fathom. We have fixed and put the new 12-inch lift to work at the 56. The pitches are looking much the same as for some time past.

TYN-Y FRON.—E. Jones, June 8: We are clearing the adit level west of the cross cut, and putting in timber under the stope in the back of same, and in lead of wheeling the stuff to surface throw it on the stull in order to make all right for beginning stoping. By this means we can clear as much in one day as we could otherwise in two. We shall be clear to the western forebreast in a few days. I will inform you as soon as we have done so. Very good blende is to be seen in the stope, and when we begin stoping I have no doubt the produce will be very satisfactory to you.

VALE OF CONWAY.—June 14: East and West Lode: This level is hard and spare for driving. We have not taken down any lode for the last forth ght. The forebreast of the end is looking very favourable for the production of lead, there being a great number of joints of carbonate of lime.—Rabbit Lode: We have had some fine lead here this week; the lode is now worth ½ ton of lead per fathom.—Surface: We are getting a parcel of lead for market.

VAN CONSOLS.—James Roach, June 12: No boundary walls have as yet been reached in the cross cuts east and west of Murray's shaft at the 5's; neither is there any alteration in the matrices of the lode driven through since my last report. The 40, driving east on Gundry's on the north part of the lode, is entering into more congenial ground; it is consequently more promising for lead than for some time past. There is no change in any other operation since my last advice. The machinery is all in good order, and doing its work satisfactorily.

VAUGHAN.—June 12: The deep level east has been extended during the past month 6 ft. in a hard and strong lode, chiefly composed of a blue clay-slate, beds of hard grit and spar containing spots of copper and blende; let to six men to drive for two months, at 10l. per fathom, and to clear their own stuff. In the 32 east near the present end a cross-cut has been driven south 2 fms. through the lode, composed of a blue clay-slate and branches of carbonate of lime, yielding at times small branches of lead and blende ores; at this point we consider we have 9 ft. further to drive to intersect the productive part of the lode now sinking upon from the level above, which, when met with, we anticipate will drain the water from the winze, and enable us to open the ground speedily; let to six men, at 10l. per fathom. In the winze sinking under the 20 our progress is very slow in consequence of the lode letting out a great deal of water; the part carried is 5 ft. wide, yielding 1½ ton of lead ore per fathom; let to six men, stented 2 fms, at 20l. per fathom; at this point we have 5½ fms. more to sink to communicate to the level under, but expect as soon as the cross cut now driving intersects this part of the lode it will drain the water from the winze and enable us to sink the same in a short time. At surface the masons have completed repairing the drawing-machine house, and end of wheel pit; we have also nearly completed putting in the drawing machine, erecting shaft tackle and pulley stands, &c., and hope to commence putting the crusher in thorough repair in a few days. The stone-breaker has arrived on the mine, and men are now engaged in raising stone for building and loading to erect the same.

WEST ASSHETON.—J. Craze, Joel Manley, June 14: The lode in the 60, west of boundary shaft, has slightly fallen off in value since our last; this we consider temporary, and an improvement is expected. No other change. We have shipped the parcel of lead sold to Messrs. Nevill, Druce, and Co., and we have engaged a vessel to take the blende, which we shall ship in a day or two. Dressing is being pushed on as fast as possible for another parcel of lead.

WEST BASSET.—James Nicholas: Grenville's Shaft—Flat Lode: The lode in the 144, east of shaft, is poor, and to the west the lode is worth 5l. per fm. The lode in the winze below this level is worth 10l. per fathom. The lode in the 134, west of shaft, is poor, and in the end driving east of rise the lode is worth 12l per fathom. The lode in the 124, west of shaft, is worth 6l. per fathom. The lode in the winze below the 114 is worth 11l. per fathom. The stopes working about this shaft are worth on an average 9l. per fathom.—Percy's Shaft: The lode in bottom of this shaft is worth 9l. per fathom. The lode in the 164, east of shaft, is worth 4l. per fathom, and to the west of shaft it is worth 10l. per fathom. The lode in the rise in back of this level is worth 8l. per fathom. The lode in the 154, west of shaft, is poor. The lode in the 124, east of shaft, is worth 11l. per fathom. The lode in the winze below the 114 is worth 8l. per fathom. The stopes working about this shaft are worth on an average 8l per fathom.—Thomas's Shaft: The lode in the 124, to the east of cross-cut and to the west of this shaft, is worth 7l. per fm. The caunter lode, in the 124, to the west of this shaft, is worth 4l. per fathom.

WEST GODOLPHIN.—J. Pope, June 13: The shaftmen are busily engaged dividing and casing Pressure shaft from the 60 to the 70; I am hoping to have this completed and the penthouse fixed in the 70 against Friday morning. No. 1 stope, in the back of the 60 west, and No. 2 stope, in the bottom of the 60 west, are looking better than for some time past. There is no particular change in the other places of operation. The masons will raise the engine-house to the top of the bob end this week.

WEST MARIA AND FORESCUE CONSOLS.—Wm. Skewis, June 13: North Lode: The stope east of western winze, in bottom of the 71, west of Willesford's shaft, is worth 12l. per fathom. No. 1 stope, west of Tucker's winze, is worth 14l. per fathom, and No. 2 stope is worth 18l. per fathom. The stopes in back of this level are worth on an average 13l. per fathom.—West Maria Lode: A stope is being worked by a pare of tributers at the 60, east of Willesford's shaft, and is worth 10l. per fathom.

WEST ROSKEAR.—H. Stephens, Wm. Bennetts, June 14: The rise above the 12 has been communicated with the winze below the adit; this affords good ventilation. We have resumed driving of the 12 west in an exceedingly promising lode—in fact, we are daily expecting to be into a good course of ore. The stopes east of Lanyon's shaft are without change to notice since our last. We shall commence raising blende after the copper sampling next week. The engine is set to carry and deliver on the mine, and which we shall be ready to commence with in a few days.

WEST TANKERVILLE.—A. Waters, June 14: The 86 cross-cut west, towards lode, is being pushed by six men; ground rather hard. The 75, now 31 fms. south of shaft, is into a lode 5 to 6 ft. wide, worth from 1½ to 2 tons of lead ore per fm. The 63 cross cut east, towards No. 2 lode, is going forward in kindly ground. The stopes (five in number) are worth on an average 1 ton of lead ore per fathom each.

WEST WHEAL TOLGUS.—June 13: There is no alteration to notice in Taylor's shaft; things are all going on well in it. The lode continues small and poor in the 135 end east. The lode in the 135 end west is 7 ft. wide, still yielding 7 tons of ore per fathom. The stopes in the back of this level are quite up to the mark, looking well. The lode in the 125 end west is small, about 1 ft. wide, yielding a little ore, but hardly enough to value. The pitch in the back of this level is yielding very well; the men getting wages on tribute—3s. 6d. in 1l. There has not been anything done in the 95 end west since our last report, but we shall resume the driving of it at once.—Richards's Shaft: The ground continues good in the 95 ends, both east and west. We shall now turn south to cut into the lode in the eastern end. The lode in the rise in the back of the 85, west of shaft, is 4 ft. wide, yielding 3½ tons of ore per fathom. The lode in the 75 west is still small, with a little ore. The lode in the 65 west is small and poor, and the ground spare for driving. We are nearly ready for next Tuesday's sampling, which we calculate will be about 400 tons.

WHEAL CREBOR.—J. Andrews, June 12: The lode in the 120 east has improved during the past week, and is now 5 ft. wide, and worth 20l. per fathom. The lode in the stope in the back of the 120, west of winze, is 5 ft. wide, and worth 10l. per fathom. In the 108 east we are driving by the side of the lode, but we have cut into it a few inches with the pick, and find it contains some good ore, and is looking very promising. The lode in the west stope in the back of the 108 is 6 ft. wide, and worth 15l. per fathom. The lode in the east stope in the back of the same level is 4 ft. wide, and worth 10l. per fathom. The lode in the 72 east is large, and letting out a good deal of water, but is poor for copper. In the 48 east we continue to carry 3 ft. of the north part of the lode, which is composed of quartz, capel, muudic, and copper ore, with a leader of lead on the north wall—altogether a very promising lode. The ground in the new shaft continues favourable for sinking.

WHEAL KITTY (St. Agnes).—S. Davey, R. Harris, June 9: We have no change worthy of especial remark in any of the points of operation since our report of the 4th inst. for the general meeting.

WHEAL NEWTON.—H. Bennetts, June 14: We have commenced to sink a winze below the 40, on the silver lode, east of Cook's; we have a splendid lode at this point. No. 2 stope, in the back of this level, is looking splendid; I never before saw such a rich lode of silver in the mine. Yesterday I consider we broke 30l. worth of silver-ore from this stope alone. The winze at the 30, west of Cook's shaft, is also looking first-rate for silver-ore; in fact, I have never seen the mine looking so well. All other points remain without change.

WHEAL PEEVOR.—Wm. T. White, J. Pryor, June 9: Setting Report: The shaftmen are making fair progress in sinking Sir Frederick's engine shaft below the 70; now down 6 fms. The 70, to drive west, on south lode, by six men, at 6l. per fathom; lode worth 20l. per fathom. We are now fixing a tramroad in this level so as to economise the discharge of the stuff, when the 70 end east will again be resumed. The stope in the back of this level, east of No. 1 winze, by four men, at 3l. per fathom; lode worth 12l. per fathom. No. 1 stope, west of ditto, by four men, at 2l. 15s per fathom; lode worth 15l. per fathom. No. 2 stope, west of ditto, by four men, at 3l. per fathom; lode worth 10l. per fathom. No. 3 stope, west of ditto, by four men, at 2l. 15s. per fathom; lode worth 10l. per fathom. The 60 to drive west on the south lode, by six men, at 6l. per fathom; lode worth 25l. per fathom. The stope in the back of this level, by six men, at 2l. 15s. per fathom; lode worth 15l. per fathom. Throughout the last month we have communicated No. 2 winze in the bottom of the 60 with the 70, and have now set to stope west of same to six men, at 2l. 15s. per fathom; lode worth 12l. per fathom. The winze to sink in bottom of the 48 west, on the south lode, by four men, at 5l. 10s. per fathom; lode worth 10l. per fathom. We expect to communicate this with the 60 some time this month, which will give good ventilation, and make stoping ground available. Our tribute pitches are producing fair quantities of tin. We raised 20 tons of tin last month, and hope to do the same this.

WHEAL PRUSSIA.—William Tregay, June 14: In the 30 west end the lode produces 1 ton of black tin per fathom; this end has proved the lode thus productive for above 20 fathoms in length. In the stope in the deep adit, 70 fathoms east of the former point, the lode produces about 12 cwts. of black tin per fathom. This deep adit has to be driven west 50 fathoms to come under the 30 west end. The lode in this end is very large and hard, similar to the lode in the 30 west before cutting the tin. From the dip of the tin ground we shall have to drive the lower level 5 or 6 fathoms further before meeting the course of tin in the 30 west, and this drivage will give 30 fathoms height of backs.

WHEAL UNY.—Wm. Rich, Matthew Rogers, Joseph Rich, June 11: The lode in the back of the 60 west is worth 6*l.* per fathom. The 130 end, east of King's is worth 6*l.* per fathom. The 140 east is worth 10*l.* per fathom. We have holed the rise in the back of the 150 east to King's shaft. The 150 end east is worth 7*l.* per fathom. The 160, east of Hind's, is worth 6*l.* per fathom. The 160 west is worth 10*l.* per fathom. The 150 west is worth 7*l.* per fathom.

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JUNE 15, 1877.

IRON.	£ s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde..	2 13 9-	—
„ Scotch, all No. 1 ...	2 15 0-	3 5 0
Bars, Welsh, f.o.b. Wales	5 10 0-	5 15 0
„ „ in London.	6 2 6-	6 5 0
„ Stafford., „ .	7 10 0-	8 15 0
„ in Tyne or Tees ...	6 0 0-	6 5 0
„ Swedish, London ..	9 15 0-	10 0 0
Rails, Welsh, at works..	5 0 0-	5 5 0
Railway chairs	— -	—
„ spikes	— -	—
Sheets, Staff., in London	9 0 0-	—
Plates, ship, in London	7 10 0-	—
Hoops, Staff.	7 15 0-	8 15 0
Nail rods, Staff. in Lon.	7 10 0-	7 15 0
STEEL.		
English, spring	14 0 0-	23 0 0
„ cast	25 0 0-	45 0 0
Swedish, keg	16 0 0-	—
„ fag. ham.	17 10 0-	—
LEAD.		
English, pig, common .	20 10 0-	20 15 0
„ „ L.B. nom.	20 15 0-	21 0 0
„ „ W.B.	21 10 0-	—
„ sheet and bar..	22 0 0-	—
„ pipe	22 10 0-	—
„ red	23 5 0-	—
„ white	27 5 0-	28 0 0
„ patent shot ...	24 10 0-	—
Spanish	20 0 0-	—
QUICKSILVER.		
Flasks of 75 lbs., ware.	7 2 6	—
SPELTER.		
Silesian or Rhenish ..	20 0 0-	20 5 0
English, Swansea	22 10 0-	—
Sheet zinc	24 0 0-	25 0 0

TIN.	£ s. d.	£ s. d.
English, ingot, f.o.b...	73 0 0-	73 0 0
„ bars „ ...	73 0 0-	74 0 0
„ refined	74 0 0-	—
Australian	67 15 0-	—
Banca	71 10 0-	—
Straits	68 10 0-	—
COPPER.		
Tough cake and ingot.	74 0 0-	75 0 0
Best selected	75 0 0-	76 0 0
Sheets and sheathing.	80 0 0-	—
Flat Bottoms	83 0 0-	84 0 0
Wallaroo	(nom.) -	—
Burra, or P.C.C.	75 10 0-	—
Other brands	75 0 0-	76 0 0
Chili bars, g.o.b........	68 15 0-	69 0 0
PHOSPHOR BRONZE.		
Bearing metal	£112 0 0	
Other alloys	£120 0 0-	140 0 0
BRASS.		
Wire	8d. -	—
Tubes	10 -	—
Sheets	9 -	—
Yel. met. sheath. & sheets.	7 -	7¾
Nails composition............	8¼ -	9¾
TIN-PLATES.*	per box.	
Charcoal, 1st quality ...	1 2 6-	1 3 6
„ 2nd quality ...	1 1 0-	1 1 6
Coke, 1st quality	0 19 6-	—
„ 2nd quality	0 18 0-	—
Black .... per ton	16 0 0-	16 10 0
Canada, Staff. or Gla., at Liverpool	12 0 0-	13 0 0
Black Taggers, 450 of 14 × 10	30 0 0-	—

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—Just at the close of last week one or two metals suddenly took a little start, and were apparently elevated on account of some pretended belief in the moderation of Russian designs, which were based upon the explanations and assurances of that Government in Gortschakoff's reply to Lord Derby's despatch. At least, there seemed to be no other cause for the change, since nothing else occurred to affect prices at all favourably, and this conclusion was partly verified when, on Monday, the news of the mobilisation of a larger number of Russian troops being considered extremely contradictory, had the immediate effect of reversing the feeling, and prices ceased to assume the upward tendency they had so strangely and unexpectedly acquired. That any reliance should be placed upon the word of a Government whose practices hitherto have been so much at variance with its promises and declarations is indeed singular, but it appears that there are still some men to be found who are credulous enough to believe that Russia has gone to war against Turkey out of pure and disinterested love for the Bulgarian; but the idea of sending an army, at an enormous sacrifice of blood and treasure, against the Turk—well knowing that Turkey cannot possibly reimburse the expenses of the war—for such an object is really so very ridiculous that it is too absurd to dwell upon; and however such a thought can be entertained for a moment by any sensible person is truly marvellous. If Russia be successful the hardest part of the task will have to be done after she has put down the Turk, for then will begin the tug of war in earnest between the several European nations regarding the territory, and the Eastern Question, with all its complications, will have to be fought out; and not until we see that might does not overcome right will we believe in moderation.

The Board of Trade Returns for last month have been issued, and they afford some interesting information: of course, they are not wholly reliable, and are certainly no proof of the soundness of trade, as exports may be made up in a variety of ways—first, by the shipment of *bonâ fide* orders; secondly, by consignments; and, thirdly, by goods in transit; and if this last item is included in the return for iron and steel the increase which the return shows is easily accounted for by the quantity of Belgian iron which is imported for re-exportation, and if this were struck out we fear the figures would be much reduced, and instead of an increase in shipments there would probably be a decrease. The continued fall in the price is the best evidence of what has been, and still is, the course of this metal. On referring to the imports of copper it will be seen that the quantity for the last five months, compared with similar periods of the two previous years, amount to several thousand tons in excess—13,000 tons more than in 1875, and 11,791 tons over 1876; whereas the exports have only increased 1044 tons beyond those of 1875, and 200 tons in excess of 1876. The imports of lead have largely increased, being 43,200 tons for 1877, against 31,505 for 1876, and 30,494 tons for 1875. On the other hand, the exports are only about 900 tons over last year, being 16,137 tons in 1877, and 15,230 tons in 1876, and 11,001 in 1875. The quantity of tin imported is less, being 134,500 cwts., against 152,871 cwts. in 1876, and 174,8 9 in 1875; and the exports are 48,196 cwts., against 46,681 cwts. in 1876, and 45,524 cwts. in 1875; and were it not for the unlimited supplies from Australia and Tasmania there might be a better future for this metal.

COPPER.—It is a most extraordinary circumstance that whenever the spirit of monopoly seizes hold of a man he imagines he is about to control the market, and that he will be able to command whatever price he likes for the special commodity he monopolises, and he is so confident of a happy result that he deludes himself by forming the most outrageous expectations and the highest hopes of success, forgetting all the while that he is making every man his enemy, and just as he is bent upon getting the better of others they will in self defence endeavour to defeat his designs, and make him pay dearly for his experience. The desire to possess monopolies has, doubtless, been a natural failing amongst the trading classes of the past, and in the Dark Ages it might have been excusable, but such relics of barbarous times are not only unsuitable, but unjustifiable, now, and ought not to be revived or attempted at the present enlightened period of civilisation, and it is with regret that we notice a disposition towards hoarding still prevailing among some of the holders of this metal, and as this is not the first occasion that we have had to speak of it we fear it is spreading, and that the force of one bad example has had the effect of producing another on a miniature scale. The difficulties of doing business are really so very great that no vexatious impediment ought to be thrown in the way, especially at the present time, which, above all others, will not admit of the slightest interruption, or bear the least interference, and every facility should be afforded to promote trade from all sides, and we trust that during this very trying period the market will be allowed to take its own course without any undue influence being exercised to affect the natural tendency of prices.

Some business has been reported during the week in Wallaroo as high as 81*l.* for spot parcels, and holders of the available stock in London can for the moment fix any price they please, since there is no open competition, and none of this brand distributed about the market; nevertheless, there are sellers for forward delivery at about 78*l.* to 78*l.* 10s., but buyers do not seem inclined to give over 76*l.*, as that is the equivalent of Burra, this latter brand being obtainable about 75*l.* 10s. The present price, therefore, of Wallaroo is not likely to hold good for any length of time, and the nearer the time approaches for the next sale there will probably be less disposition to buy, and consumers will no doubt strain a point to wait until then. In Chili the price has been steadily upheld, the principal part of the business that has been transacted being between 69*l.* and 69*l.* 5s. At present there is no ground for supposing the market will get any better; according to appearances it is more likely to decline, as we hear of very short deliveries, and good brands being offered to the smelters in Swansea at 69*l.*, and declined. A fair business has been done in manufactured, but yellow metal is slow, and the limits from India are still much below sellers' rates, and as these markets have been well supplied, and it is full early to begin shipping again, we do not look for any improvement from that quarter, or any other yet awhile.

IRON.—There is no metal suffering so much from loss of trade as that of iron, and the market seems to have gone almost away from the Welsh district—we might almost say this country. Staffordshire is also suffering to a very great extent, and it is only a few works on the East Coast that are all active. The importation of Belgian iron carries off the work that would otherwise find its way to Wales, and there seems to be no limit to the reductions which the Belgians are able to make. The price of their No. 1 bar is quoted 5*l.* 10s. 6d., less 2½ per cent., free Thames; and as regards price there is none of the Welsh houses that can or are willing to approach anywhere near the price, the closest being 6*l.* 2s. 6d. Now, as this price is fully 10s. per ton higher, all the orders for cheap iron naturally find their way to Belgium, and thus it is that so many of our works are lying idle, and so little business can be done with our own people, and however those who are so deeply interested in the iron trade of this country can allow this sort of thing to continue without making every effort to check it is truly surprising. If the matter were taken up in earnest, and fairly represented and discussed, surely some remedy might be provided. The whole country is deeply interested in the matter, for the loss of the iron trade would be the beginning of the fall of England. A sacrifice, then, must be made to recover that which is lost, but if all made concessions, and were willing to put their shoulders to the wheel, there might be still a chance of competing successfully with foreign productions. There must be concessions on the part of the colliers, the quarrymen, the miners, the ironworkers, the ironmasters, the railway companies, canal companies, and the lightermen. All must work on a reduced scale, and at such a reduction as will enable the price of common Welsh bars to be sold in London as cheaply, or a little cheaper, than common Belgian bars, and in that way only shall we be able to beat the Belgians out of the market, and the sooner some of the most influential set to work about the task the better, for no improvement can take place until the whole trade is thoroughly reorganised. The demand for all descriptions of English iron is extremely limited, but for Swedish bars there has been more doing, but at low prices. The cheap freights, however, from the Baltic, which this year are only 1s. and 2s. per ton, have enabled sellers to accept buyers' limits, which would not otherwise have been the case. In Scotch pigs there has been a quiet market, and to-day's price is 53s. 9d.

SHIPMENTS.

Week ending June 10, 1876	Tons	10,330
Week ending June 9, 1877		7,733
Decrease		2,597
Total decrease for 1877		7,177
Imports of Middlesborough pig-iron into Grangemouth:—		
Week ending June 9, 1877	Tons	6,240
Week ending June 10, 1876		3,445
Increase		2,795
Total increase for 1877		27,830

LEAD.—This metal has been very dull, and sellers have given way in price both for English and foreign. The exports for the first five months of the year compare favourably with the two previous years especially to China, which is 8000 tons, against 6000 tons last year, and there has been more shipped to the United States, but less to France and Russia.

QUICKSILVER.—The market price is reduced to 7*l.* 2s. 6d. The imports up to the end of May amount to 2,524,643 lbs., against 2,256,562 lbs. in 1876; and 1,747,297 lbs. in 1875, corresponding periods.

STEEL.—In foreign the market remains unaltered, and English is extremely quiet. The advices from Sheffield are very unsatisfactory, as there are very few foreign orders obtainable.

TIN-PLATES.—The quotations are slightly higher, and a few transactions have been made at an advance of 6s. per box, but although makers are quoting higher rates, buyers are disinclined to pay them, and it seems doubtful whether makers will be able to do more than prevent the market falling below such prices as have been recently taken. Probably as the season advances, and some better demand springs up for autumn shipments, prices may then improve; but in the meantime the prospect is not particularly lively. Nevertheless, it must be borne in mind that present prices are exceptionally low, and ought to increase the demand very considerably, and we hope it will do so at the end of the summer.

TIN.—The importations of this metal up to May 31 are 252 tons less than last year, and 466 tons less than the corresponding period of the year before, and these figures are deserving the consideration of the trade, for they prove that the accumulation of stock is rather less from recent imports than from those of a more distant date, and should this favourable comparison continue to increase as the year advances, it will exercise a very important bearing upon the future of the market, for although trade is depressed now, and the deliveries (with the exception of last month, which were very good) have lately been below former periods, yet it must necessarily follow that on the general revival a sensible impression would be made on the stock, and as soon as the statistical position can be reckoned upon taking a decidedly favourable turn an immediate rise will be effected. Of course, it would be full early yet to act upon the before-mentioned feature, because there are so many weighty matters pending, and such uncertainty about politics, that however good prospects might be for an advance in ordinary times, the same influences lose all power at a time like the present; and, further than this, we should be sorry to see importers piling up their tin just now, and throwing difficulties in the way of the little business that is doing merely with the object of hoping to do somewhat better hereafter, and which possibly might not be realised, for, perhaps, the latter part of the year may altogether reverse the favourable comparison of the first five months. The great cause of depreciation is known to be the Australian and Tasmanian supplies, and they have hitherto been so very excessive as nearly to exclude Banca, Billiton, and Straits being imported to compete successfully with them, neither can English be sold as cheap, so that the market may be said to be governed almost entirely by the sellers of Australian, and future prices depend upon the advices received from those colonies.

The bulk of the tin in stock has cost considerably more than to-day's value, and we think we should not be far out in saying the whole of it bears no profit at all, and many holders may think the present opportunity safe for lowering their average, and possibly it may be so, for the present price is lower than it has been for the last 34 years, it being necessary to trace as far back as the year 1843 to find a parallel, and previous to which year the price was considerably higher; in fact, it only remained at these low figures for 15 months, and the price before and after that time was always much higher than it now rules. We do not put this forth as reasonable grounds for an immediate rise, although it will have its weight, no doubt, in due season; but in the interim it is better, perhaps, for the interest of all concerned that prices should fall, and until such a time as the miners of Australia and Tasmania regulate their supplies more in accordance with the requirements of our market there will be no security to buyers in taking beyond what they want for their daily consumption. The best way to arrest the downward tendency and to inspire confidence would be for the leading tin companies in the colonies to agree amongst themselves to lessen their production for the next 12 months by about 10 per cent. on previous shipments, and probably in that time the demand would have recovered and the stock worked off, and a considerably higher price realised, and the market altogether in a far more satisfactory state.

THE IRON TRADE—(Griffiths's Weekly Report).—Friday Evening: The price of warrants on the Glasgow Exchange this afternoon is 53s. 9d., a loss on the week of 3d. per ton. We quote No. 1 iron:—Gartsherrie, 62s. 6d.; Coltness, 65s. 6d.; Calder, 61s. 6d.; Langloan, 62s.; Summerlee, 61s.; Monkland, 55s. f.o.b. Glasgow; Glengarnock, 59s. 6d.; Eglinton, 55s. 6d. f.o.b. Ardrossan; Shotts, 59s. f.o.b. Leith; Kenniel, 56s. f.o.b. Bo'ness. The iron trade remains in the same torpid condition which we have had to report of late, and we regret to say there is no great change to mention this week. It is, however, a pleasing feature to observe that the export of iron is increasing. The Board of Trade returns for the last month unmistakably reveal this improvement, and without committing ourselves to any opinion in regard to future prices, it does appear now that we have really touched the bottom, in as far as it relates to the falling off in quantity required for export. The exports of iron being, without doubt, now on the increase. It is also said that the demand for tin plates looks more healthy for the future, the advices from New York being more encouraging. In our market the business doing is quite of a normal character, no large orders for bars or plates being afloat. Shipping orders for sheets are more plentiful than they have been, but in this class there is no rush of orders or pressing demand; still, there is more doing, and as the demand for galvanising sheets has improved, there is more activity just now in the sheet iron department than any other. There are orders also on the market for nail rods, and a moderate business is being done for export in common bars of English make very little is being done here. What orders we have go to South Wales and Middlesborough. There is a little more life in the hoop iron trade, and moderate orders for this class have been sent down to North and South Staffordshire this week.

The statutory meetings of the Pelsall Coal and Iron Company has been held this week; the accounts reveal a loss of 5086*l.* 14s. 7d. The meeting of John Bagnall and Sons will take place next Thursday; from the statement of accounts already in the hands of the shareholders, the loss here on the one year's working is 14,972*l.* 16s. 5d., and the reports of other limited companies recently issued are unusually unsatisfactory, and likely to be so as long as the conditions for hours of labour are so antagonistic to the successful working of the iron trade. The market at Birmingham, on Tuesday, was cheerful, and the Exchange fairly attended. The manufacturers of second-class bars did a moderate business. The sheet-iron makers, with orders for export and for galvanising purposes, have more to do than of late. The leading makers are not over done with orders. This class in the boiler-plate department complain much. There are buyers on the market for nail rods. At Barrow, on Monday, the market was firm, without much business. At the Middlesborough Exchange, on Tuesday, prices weak—little business done. In Glasgow the business has not been large during the week, and prices remain about the same as last week. Metals continue to droop. Australian tin has been done this week at 67*l.* 15s. There is very little change in spelter, prices are weaker, and the quotations gradually lowering.

The MINING SHARE MARKET has been more active this week than for some months past, and a considerable amount of business has been transacted in a few prominent mines, which seem likely to advance in price, as well as become popular, though prices generally are still merely nominal.

The chief transactions have been in Rookhope, North Laxey, Glenroy, West Chiverton, Parys Mountain, Roman Gravels, Leadhills, Clementina, D'Eresby Mountain, West Tankerville, Tankerville, South Condurrow, East Van, Van, and a few others.

Among TIN MINES, Dolcoaths are quoted 30 to 32; Tincroft, 15 to 17; Carn Brea, 34 to 36. East Pool, 9 to 9½; at the meeting, held in Cornwall, the accounts, as presented, showed a profit of 94*l.* on the quarter, and a balance in hand of 137*l.* A dividend of 2s. per share was declared. The costs, charged to February last, amounted to 6406*l.* Copper ore sold, 1473*l.* Credit is taken for tin ore "in stock," 1919*l.* Wheal Grenville, 25s. to 35s.; at the meeting here a call of 10s. per share was made. The month's sale of tin, 16 tons, realised 43*l.* 5s. per ton, or 710*l.* 3s. 9d. Wheal Peevor, 3½ to 4; the shaft is now down 6 fms. below the 70. The 70 west is worth 20*l.* per fathom; 60 west, 25*l.* per fathom. Last month 20 tons of tin were sold, and the same quantity expected this. Cook's Kitchen, 1⅞ to 2¼; South Condurrow, 7⅞ to 8½; West Basset, 2 to 2½; West Godolphin, 2¼ to 2¾; Wheal Kitty (St. Agnes), 2 to 2½; Wheal Uny, 1⅛ to 1⅜.

Among COPPER SHARES, Devon Great Consols have not been so firm, at 4 to 4½. Bedford United, 10s. to 15s.; this mine is opening out well, and good reserves of ore accumulating. Wheal Crebor, 1½ to 2; the lode in the 120 east has improved to 20*l.* per fathom; 1½ stope in the back to 10*l.* per fathom. The 108 east is looking very promising for ore. The same may be said of the 48 east. Marke Valley, 1 to 1½; Penstruthal, 8s. to 10s.; Tolgus Consols, 5 to 5½; South Crofty, 10 to 11; West Seton, 30 to 32½; West Tolgus, 60 to 62. Parys Mountain, 8s. to 10s.; we understand the meeting will shortly be called to divide this sett, and in a way that will raise a large working capital for the Parys Company, and also for Morfa Du. In such a matter it was necessary to proceed with caution and in a legal way; counsel's opinion, therefore, had to be taken on certain points, and this has caused the delay. There are, it is stated, no difficulties whatever in the way to the plan which will now be submitted by the directors, and the long correspondence in the Journal on the subject shows the great and increasing interest which attaches to the mine. Parys Mountain is said to be looked upon as "one of the finest speculations of the day, and if it were once assured that the capital necessary to carry it out would be forthcoming, the shares would probably double or treble in market value." The sampling next week will be 280 tons of copper ore, including the precipitate.

Among LEAD MINES, Roman Gravels are quoted 10 to 10½; in our remarks the week before last we stated that the ends in the mine were worth in the aggregate 5 tons per fathom. In his report of last week Capt. Waters refers to this as a mistake, and says the ends were worth (as stated in his report) 12 tons. Our remarks were based upon a copy of his official report, in which the 106 end south was valued at 1 ton. The same level north ½ ton. The 95 south is worth 2 tons. The 80 south is worth ½ ton. The 65 south is worth 1 ton: total, 5 tons. It seems, however, we omitted a 50 south of same winze, worth 3 tons, and a drift above the 80, north of Powell's winze, valued at 4 tons; but Capt. Waters can scarcely expect us to look upon this drift above a level to be what is usually understood by an end in mining. Van, 33½ to 35½. East Van, 5 to 5½; Tempest shaft is down nearly 10 fms. below the 25. The branch west of shaft is improving, and may at any time, from present appearances, cut into a course of ore. Tankerville, 7½ to 7¾; the sale of ore, 125 tons, realised 1703*l.* Rookhope in demand at 20s. to 22s. 6d.

Great Laxey, 20 to 21. North Laxey, 19s. to 21s.; the 60 fm. level south has improved to 2 tons per fathom. This is the new discovery made a few months ago, and which sent shares up to a high price. At the 70 a cross-cut is nearly in the same lode, and if a course of ore is found here also it will be very important, and short cross-cuts will soon see it also at the 84, 95, and 110 fm levels. Genova have been rather largely dealt in at 20s. to 25s.; the lode in this shaft is now 10 ft. wide. West Tankerville, 1 to 1¼; the 75, 31 fms. south of shaft, is in a lode 5 to 6 ft. wide, worth 1½ to 2 tons of lead per fathom. Aberdaunant, 12s. to 14s.; Assheton, 1½ to 1¾; Bodidris, 1 to 1½; East Caven Moor, 10 to 10½; Glyn, 1⅛ to 1⅜; Great Dyffryn, 3 to 4; Leadhills, 6 to 6½; Pateley Bridge, 2 to 2½; Penneley, ⅛ to ⅜. Gorseddau and Merllyn, 5 to 5½; the sale of lead ore on Thursday—50 tons—realised 725*l.* Pennant, 5 to 5½; the 20 west, on south lode, yields good lead. Denbighshire, 1½ to 1¾; the mine is said to be improving. Van Consols, 1½ to 1¾; West Assheton, ¾ to 1; West Chiverton, 15 to 17. West Craven Moor, 11 to 13; Clementina, 49 to 50; D'Eresby Mountain, 20 to 25; Grogwinion, 3½ to 4½; Red Rock, 2¼ to 2¾; South Cwmystwith, 3 to 3½; Wye Valley, 3½ to 4½; West Wye Valley, 3¾ to 4½; West Goginan, ½ to 1; ditto Preference, 1 to 1½.

In FOREIGN MINES, Argentines are 4½ to 4¾; Blue Tent, 3 to 3½; Condes of Chili, 4 to 4½. Chontales, 7s. 6d. to 10s.; the advices this month show a profit of 102*l.* The gold return was 250 ozs., estimated at 700*l.* At Javali the profit was 528*l.* The gold return, 563 ozs., was valued at 1450*l.* Eberhardt and Aurora, 7 to 7½; Exchequer, 5s. to 10s.; Flagstaff, 2 to 2½; Frontino and Bolivia, 2¾ to 2⅞; New Quebrada, 1¾ to 2¼; Pestarena, 3s. 6d. to 4s. 6d.; Richmond, 6¾ to 7¼; San Pedro, 10s. to 15s. Hallefall Mining Company (Limited) 5 to 5½; the company's mines adjoin the Vieille Montagne property at Orbero, in Sweden. Capt. Southey of West Chiverton, returned on Monday last, we understand, after carefully surveying the mines and his report is expected next week. The lode at the shaft for 8 ft. in width is solid lead and blende. The capital of the company is 60,000*l.*, in 12,000 shares of 5*l.* each.

The Market for Mine Shares on the Stock Exchange during the week has been somewhat irregular. A comparatively flat tone was apparent up to the "account"—completed on Thursday—but more activity followed, with a tendency to firmer quotations. Among foreign mines the leading feature has been an advance in Frontino and Bolivia shares.

St. John del Rey, 300 to 320; the last telegram received is dated Morro Velho, June 6, but was delayed at Rio de Janeiro until Monday; it states that the produce for May was 39,000 oits., of the value of 15,112*l.*, the ley of the ore being 7·8 oits. per ton. The general work is progressing favourably. Don Pedro North del Rey, ¼ to ½; the telegram received on Monday, and dated Rio, June 9, states the produce for May to have been 4650 oits. Condes, 4 to 4½; a telegram states that the recent storms had abated, and the mines were at work; the adit was making good progress. All parts of the mine were looking as well as last reported.

Frontino and Bolivia, 3½ to 3¾; the advance in these shares is attributed to heavy purchases said to have been made on account of some South American merchants. By the latest advices, referred to in last week's Journal, the revolution, which had continued nine months, was at an end, and the labourers were returning to the mines. By the managers letters just before the outbreak of the revolution the mines were making about 1200*l.* net profit per month, which the manager fully expected to double, or even treble, in a short time. The Silencio Mine has not yet been worked, but the manager stated that it would make as much profit as all the other mines. Private advices state that the several mines belonging to the company will in a short time return handsome profits and it is on behalf of those who have received these advices that large purchases of shares are now being made; the closing price is 3½ to 3¾. Javali, ⅜ to ½; it appears that during the 24 days preceding May 6 the net profit was 528*l.*, the 1800 tons of quartz crushed having yielded 563 ozs. of gold, of the value of 1450*l.*, whilst the total expenditure, including 143*l.* on capital account, was 922*l.* Chontales, ¼ to ½; the report, dated May 5, states that the gold produced during the preceding month was 252 ozs., from 1120 tons of quartz. The profit was 102*l.*

Richmond, 6¾ to 7¼; a telegram was received at the company's London office to-day, Friday, stating—"Trial definitely set for July 23, at San Francisco, before Field and Sawyer, without jury. Westerly drift again struck ore 200 ft. from first discovery. Do not think furnaces can be started till after trial. Reserves in undisputed ground too limited." The manager's report states the further development of the West Hill discovery, which at the date of his writing had been proved upwards to the extent of 60 ft. from the 500 ft. level. A subsequent telegram names 70 ft. as the height attained in ore. The manager's letter is very meagre in its information on a point at this moment of such great importance as the probability of sufficient ore being available outside the disputed ground to keep the furnaces going. The local press gives details of the last discovery, which elevate it to a much higher level than the official information indicated; the dimensions given from both sources are tolerably near, but the manager's statement that the rise is in good ore looks very lame by the side of the local editor's report, that "it is immensely rich in silver and gold, richer by far than anything the mine has hitherto produced." It is a curious coincidence that the two litigant companies should, as the effect of the injunction each has obtained against the other, have been driven to explore unpromising ground, and each at the same time find such remarkable success. The statement in last week's Journal that the trial would probably be early in June was derived from the Eureka papers, and the last information received at the London office is that it was not expected to come on till July, which turns out to be correct.

Sierra Buttes, 1¼ to 1⅞; Plumas Eureka, 2½ to 3; the May return gives a total working profit of $35,394. The Sierra Buttes receipts were $31,362, and the total Californian expenses, including cost of mining and milling, $21,004. The Plumas Eureka receipts, including sulphurets, were $42,483, and Californian expenses, including mining and milling cost, were $17,447. Exchequer, ¼ to ⅜; the general meeting, held on Tuesday, was considered satisfactory. It was confidently stated there would be no difficulty in raising the necessary

capital, and that subscriptions for the proposed debentures would be taken at long dates, the money actually required at the present moment being trifling. If the whole of the debentures be taken up, there will, it is thought, probably be enough money, not merely to develope the mine to a depth of 1000 ft., but to extend the mill to a capacity of 50 tons per day. I. X. L., ⅜ to ⅝; the latest advices state that satisfactory progress was being made at the several points of operation, and the result of the low-grade ore treated at the Exchequer Mill is awaited with much interest.

Hydraulic or Gold Washing Shares remain without alteration in value, and there are few shares changing hands. Blue Tent, 2¾ to 3; the usual work is progressing satisfactorily, and the water supply provided by the company's canal is very good. Oregon, 4 to 4¼; from the superintendent's report it appears that he has succeeded in discovering the blue gravel channel in Thoss claim, thereby proving the existence of pay lead through the whole length of the company's property. It is something over two miles from the point where the channel is being worked on the Reed claim to where the late development has been made in the Thoss. Should the coming water season be anything like an average one—which is more than probable—the superintendent predicts satisfactory results. Cedar Creek, ⅜ to ⅝; the superintendent gives the details of the present operations. The Baker claim is described as being in good shape for profitable working, and satisfactory results are looked for.

Lead mines continue firm, with a fair amount of business doing. Van, 33 to 35; the 105 end west is now in a strong, masterly lode, and is rapidly improving for lead as the end advances. In the same level east the lode is letting out a strong stream of water and gas, which is a good indication of a productive lode. The 90 east and west is also improving; other parts of the mine unchanged. Grogwinion, 3½ to 4½; there is no special news from the mine this week, all continues to go on well. Wye Valley, 3½ to 4½; the recent improvements continue to hold good, and prospects are considered cheering. A parcel of lead is being got ready for market. West Wye Valley, 3¾ to 4¼; the underground operations continue to progress, and the lode is opening out well. Red Rock, 2¼ to 2¾; satisfactory progress said to be making at all points. South Cwmystwith, 3½ to 4; the preparation of dressing machinery is being pushed on; the mine is considered to be looking well. Saint Harmon, 3 to 3½; the directors' and managers' reports, prepared for the annual meeting, stated that "good and and satisfactory progress has been made in the development of the mine during the past year. Our prospects have continued to improve, and are more encouraging at the present than at any period since the company was first established." A good deal of underground work is stated to have been accomplished, and a quantity of ore ground laid open, and the cross-cut towards the south lode has been driven upwards of 40 fms. The company is described in a good financial position, having upwards of 6600*l.* available for further developing and opening out the mine, which it is anticipated will, before very long, begin to return ore. Pateley Bridge, 2 to 2½; the Rake vein in the 30 east is opening out very satisfactorily, and now worth 1½ ton per fathom. The 30 west on the same vein is also improving, and now worth 1 ton of lead ore per fathom. Fielding's vein in the 20 is worth 1 ton per fathom. The Sun vein is producing 25 cwts. of lead ore per fathom. Upon the whole the appearances are considered encouraging.

Subjoined are the closing quotations:—

Assheton, 1 to 1¼; Carn Brea, 33 to 35; Devon Great Consols, 4½ to 5; Dolcoath, 29 to 31; East Caradon, ⅝ to ⅞; East Lovell, 1½ to 2; East Van, 5 to 5½; Glenroy, 1 to 1¼; Glyn, ¾ to 1¼; Great Laxey, 20½ to 21; Hingston Down Consols, ½ to ¾; Leadhills, 6 to 6½; Marke Valley, 1 to 1⅛; Parys Mountain, ⅜ to ½; Pateley Bridge, 2 to 2½; Pennerley, ⅛ to ¼; Penstruthal, ⅜ to ½; Roman Gravels, 10 to 10½; Tankerville, 7¼ to 7¾; Tincroft, 14½ to 15½; Van, 33 to 35; Van Consols, 1½ to 1¾; West Assheton, ¾ to 1¼; West Basset, 2½ to 3; West Chiverton, 14 to 15; West Tankerville, ⅞ to 1⅛; West Pateley Bridge, 1¼ to 1½; Wheal Crebor, 2½ to 3; Wheal Grenville, 1 to 1¼; Almada and Tirito, ⅛ to ⅜; Argentine, 4¼ to 4¾; Birdseye Creek, ⅜ to ⅝; Blue Tent, 3 to 3¼; Cape Copper, 36 to 38; Cedar Creek, ¼ to ½; Chontales, ¼ to ½; Colorado Terrible, 1⅝ to 1⅞; Condes of Chili, 4 to 4½; Don Pedro, ⅜ to ⅝; Eberhardt and Aurora, 7 to 7½; Exchequer, ¼ to ⅜; I. X. L., ⅜ to ⅝; Flagstaff, 2⅛ to 2⅝; Frontino and Bolivia, 3¼ to 3⅜; Javali, ⅜ to ½; New Zealand Kapanga, 2⅛ to 2⅜; Last Chance, ⅛ to ⅜; Malpaso, ⅜ to ⅝; Malabar, ¼ to ½; New Pacific, ⅛ to ¼; New Quebrada, 2 to 2¼; Pestarena, ⅛ to ⅜; Plumas Eureka, 1⅝ to 1⅞; Rica, ⅛ to ⅜; Richmond Consolidated, 6¾ to 7; San Pedro, ⅝ to ¾; St. John del Rey, 315 to 325; Sierra Buttes, 1 to 1¼; Tecoma, ⅛ to ⅜; United Mexican, 1½ to 2; Oregon Preference, 4 to 4¼; Emma, ⅛ to ⅜.

COLLIERIES.—We have nothing fresh to report as regards the condition of the colliery share market, and very little on the subject of the coal trade. In those districts where some increased activity has been apparent business continues fair, and even improving. This is specially noticeable at the Durham Collieries, in the neighbourhood of the Tyne, where steam coal has advanced in price. In Lancashire and a few other districts an advance has been obtained in the price of small coal and slack, and these are evident signs of further improvement. The iron and steel trades, though still dull, are really looking up, and will, no doubt, soon give a further impetus to the coal markets. Wages disputes are again showing themselves, but we cannot look for any other result from them than a victory on the side of the masters. In some case the men have already given way, and in others the disputes have been referred to arbitration. It appears at last certain than no coal underlies London. The boring at Messrs. Meux's has passed from the lower greensand into a stratum belonging to the Devonian rocks. All the secondary rocks below the cretaceous system are missing, and no traces of the coal measures, nor of the carboniferous limestone below them, have been found.

Business in the share markets has been very restricted; and, in fact, merely nominal. No news of any importance has reached us from the collieries, and the shares, therefore, have about maintained their prices of last week. Alltami close at 4½ to 5; everything is going on well at the colliery, and the main coal is opening out first rate. Cardiff and Swansea are at 1½ to 2; the company is working well, but all the profits made at the Pentre Colliery are more than swallowed up by the loss on working at Resolven. At Pentre about 1000 tons per day are being raised at a good profit. Coal in the Resolven district is, however, low in price, and as the Resolven Colliery is not in full work it cannot be made to pay at present. A meeting of the shareholders will be held next month, and we understand that the accounts will show a loss on the balance for the year, but one which, however, is satisfactorily small when compared with the low price of coal, and the loss made by other collieries in the district. Business at Chapel House continues flourishing, a good output being maintained, and all the coal raised being readily sold at very remunerative prices. The new 15 ft. shaft is now about 2 6 yards down, and sinking is going on as rapidly as possible. The shares are at 2½ to 3; Llay Hall close at 9 to 9½; Newport Abercarn, 2 to 2½; New Sharlston (pref.), to 4; Thorp's Gawber Hall, 1½ to 2.

Vice-Chancellor Bacon in Chambers has appointed Mr. J. Waddell official liquidator of the Buitron and Huelva Railway and Mineral Company.

The Phospho-Guano Company have declared an interim dividend of 7s. per share, free of income tax, being at the rate of 10 per cent. per annum.

The London and Provincial Marine Insurance Company will pay for the half-year ended the 30th inst. the usual rate of 10 per cent. per annum.

The Universal Marine Insurance Company will pay for the half-year now current the usual interim dividend at the rate of 10 per cent. per annum.

The New Zealand Loan and Mercantile Agency Company will pay an interim dividend at the rate of 10 per cent. per annum for the last six months.

The Bristol Wagon Works Company's annual report shows a net profit of 8190*l.*, and after providing for the interim dividend there remains a balance of 4890*l.*, out of which a further dividend at the rate of 6 per cent. per annum is recommended, leaving 1590*l.* to be carried forward. The directors state that, notwithstanding the keen competition which exists for this class of work, they are receiving a fair proportion of the orders which are being given out.

EXCHEQUER.—The shareholders have been much encouraged as to the value of their mine by the favourable opinion expressed by Mr. Henry Sewell, F.R.G.S., at the meeting on Tuesday. As is well-known, Mr. Sewell has a world-wide experience in silver mining, therefore his statement was most reassuring that in Chili ruby silver ore was never looked for at a less depth than 600 ft., while the present deepest level in Exchequer was only 400 ft. Mr. Sewell also made the further encouraging statement that during a life-long experience in this peculiar class of mining ruby ore of the same character as that taken from the Exchequer had never been found except in connection with a bonanza. A large proportion of the additional capital was subscribed in the room, the Chairman (the Right Hon. the Earl Poulett) heading the list with 1000*l.*

MINING IN THE ISLE OF MAN.—It was mentioned in last week's *Mining Journal* that the directors of the Bell Abbey and Falcon Cliff Mines were inviting subscriptions for the unallotted shares of the first issue, and the inducements offered were prominently referred to. The circumstances under which the issue was decided upon were explained, and the reports of Messrs. Walter Eddy, John Kitto, Wm. Kitto, and R. Barkell were referred to and commented upon. It will have been noticed that strong reference was made by these gentlemen to the south ground, where the vendors advisedly ceased working, over two years ago, until they could arrange for an extension of land. Having secured this they resumed work about a month ago, and Capt. Barkell now reports that on Friday last the men cut a nice rib (3 in. wide) of lead, copper, and blende mixed, and that it is lengthening as the end is advanced. This, taken with other points of interest, should, it is thought, strengthen the promoters' position with the public. It will be remembered that the sett is very extensive (1120 acres), and held on a Crown lease upon favourable terms. The greatest care has been taken in laying out the works and buildings, and in selecting the machinery, whilst the most has been made of the natural advantages of the position of the mines.

WEST TANKERVILLE.—The 75 fm. level is worth 1½ to 2 tons of lead ore per fathom, and the five stopes in the 63 average 1 ton per fathom each.

WEST ROSKEAR MINE sold on the 12th inst. five parcels of silver-lead ore, at 19*l.* 6s., 16*l.* 19s., 23*l.* 8s., 19*l.* 5s. 6d., and 21*l.* 8s. 6d. per ton respectively. The first copper ore sampling under the new management will take place on the 19th inst. The lode in the 12 east continues worth 4 tons of copper ore per fathom. The rise above the 12 is communicated with the winze below the adit, and driving the 12 west has been resumed. At this point the lode presents the most favourable indications of a deposit of copper ore being not far distant.

*** With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Commerce of the Superior Metals for the First Five Months of 1877; the Port Phillip and Colonial Gold Company; Frontino and Bolivia Mining Company; Linzi Mines, Tuscany; the Labour Cost of Cornwall (E. Skewes); "God's Treasure House in Scotland" (R. Tredinnick); Parys Mountain Mine; Gold in Merionethshire; Captain Tregay, and Pedn-an-drea Mine; Confidence in Public Companies; Dividends Gone; Wheal Grenville; New Brondloyd Mine (S. Trevethan); Investment (G. Budge); Holmbush, and Wheal Newton (S. H. Emmens); North Laxey Mine; Miners' Voracity; Wheal Jane, and West Chiverton (T. Whitehead); the Wild Duck, or Sportsman's Arms—The Scotch Mining Share Market—Foreign Mines—Registration of New Companies—Economic Portable Railway for Mines—Patent Matters—Meetings of Exchequer, Virneberg, Wheal Grenville, West Goginan, and East Pool Companies, &c.

Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be *filed* on receipt: it then forms an accumulating useful work of reference.

SIR,—Can any of your readers inform me, through the *Mining Journal*, if there are large deposits or lodes of copper ore in the form of carbonates in Ireland; and, if so, how much there may be obtained monthly at any given place (averaging 3 to 5 per cent metallic copper), and at what cost per ton it may be mined? I have been told the County Cork abounds in copper ores.—CHEMIST.

SIR,—Would any publisher of chemical works inform me, through the *Mining Journal*, if there is a good book published specially on the manufacture of acids; and, if so, where obtainable, and the price?—ACID.

EMPLOYERS' LIABILITIES—"H. F." (Grantham).—There can be no question as to servants in the joint employment of two firms being in a common employment, which would prevent the representatives of one killed by accident resulting from the negligence of an employee of either recovering compensation, no matter whether the negligent employee were in the joint employment or otherwise; and there can be no question that in many cases where compensation is recovered the survivors would, if given the amount expended in litigation, have received a larger sum than the compensation yielded.

NEWFOUNDLAND COPPER—"R. A." (Ayr).—The two principal copper producing mines in Newfoundland are the Tilt Cove and Betts Cove, both of which are in private hands. There is abundance of mineral in the maritime provinces.

TECHNICAL EDUCATION IN THE COLONIES—"R. A." (Tettenhall).—There are ample facilities for obtaining sound technical education in most of the colonies—many have schools of mines and schools of science under the control of competent teachers—but we do not recollect either a science or a mining school for New South Wales, though technical courses are given in the Sydney University, which are almost equivalent. There is one advantage in all colonial educational establishments of the kind mentioned—the students receive more direct attention from the teachers, and have usually a larger amount of fieldwork and workshop practice.

VALVELESS DRILL—"H. R." (Norwich). The valve is dispensed with by making the piston itself open and close the ports. Theoretically, the arrangement is very simple, and theoretically the Dubois-François is absurdly complicated, but practically the latter gives better results than the ormer. This is by no means an exceptional case of practical efficiency being attained with a machine apparently defective.

IMPORTANT NOTICE—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the *Mining Journal* to many countries will be reduced to one fourth. Henceforth the subscription will be 1*l*. 10s. 4d. per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxemburg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Servia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 1*l*. 19s. (50 frs.)

Received,—F. M. F. Cazin (New Mexico): Letter by post. Yes—"Shareholder" (Holmbush)—"Smelter:" Address, Mr Armstrong, Cashwell Lead Mining Company, Pilgrim-street, Newcastle-on-Tyne—"A Country Cousin" (the Two Sisters): The meetings of the companies will be held very shortly, when all information that is desired can then be obtained. The publication of further letters is not now necessary, full attention having been directed to the management of the company—"Shareholder" (Van Consols)—"Speculator" (Bath): We never answer such questions. Apply to your broker—"W. R."—"A Member of the Committee:" Send the particulars, and they shall be published. The shareholders require and should have information—"Equal Justice"—"C. E:" The matter is noticed in another column, but we should like the details.

AMERICAN SUBSCRIBERS.—In reply to several enquiries, it may be stated that subscribers in the United States can be supplied with the *Mining Journal* post free, at the price of $8 80c. gold per annum, payable in advance, by remitting to Mr. D. Van Nostrand, publisher, and importer of scientific books, &c., Murray-street, New York; or, direct to our Office, 26 Fleet-street, E.C.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, JUNE 16, 1877.

PREVENTABLE ACCIDENTS IN COLLIERIES.

From the Returns of the Government Inspectors of Mines it appears that in 1876 there were 839 persons killed in our collieries from various causes, being 86 less than the previous year. Favourable as are the reports, the question naturally suggests itself as to how many of these fatal accidents were the result of negligence or ignorance, and might have been prevented had ordinary precautions been adopted. Explosions of fire-damp have long been considered as the most dangerous enemy the miner has to guard against, but the fatalities from those are considerably less than from accidents caused by falls of roof and coal. This was more particularly the case last year, for whilst there were only 42 deaths from explosions, there were 430 persons killed by falls of roof and sides. The figures are very high indeed, more especially as in most instances the persons killed have aided materially in their own destruction. By using plenty of timber and carrying out the rules in force at the different collieries falls of roof of a fatal character should almost be unknown. But it unfortunately happens that a collier, by inurement to danger, and intent only on getting as much coal as possible, becomes almost entirely oblivious of the danger to which he is exposed by his own hands. He considers only the matter of getting coal, for which he is paid, and looks upon timbering as so much time wasted, seeing that he cannot charge for it. As a rule, there is always plenty of timber placed near to the working places, so that it is the fault of the men if they do not use it, and place it at such intervals as will securely support the roof. In holing under coal, especially where there are slips in the bed, sprags are usually at hand for supporting the upper coal, but they are very often left untouched until a fall takes place, and, in all probability, kills the thoughtless workman. Timbering in main roads, where very many accidents take place, only requires the strict carrying out of a rule to the effect that no overhanging stone or other material that might become loose should be left unsupported or unremoved. Were this rule carried out we should hear of many less accidents from falls. It is also essential to safety that the working places should be frequently examined, and broken and decayed timber replaced by what is sound. The safety of the workman, however, greatly depends upon himself, for as Mr. WARDELL, the Inspector for Yorkshire, states in his last report many of the accidents from falls are such as might have been prevented with ordinary care and forethought, whilst the blame often rests with those who pay the penalty of this inattention or neglect with their lives. The fact should be strongly impressed upon the men by the manager and deputies, and who, supplying plenty of timber, should insist upon its being placed at certain distances, and see that a rule to that effect was strictly carried out. If this were done we should soon find a marked decrease in the number of deaths from falls of roof and coal, which last year furnished more than one half of all the fatalities in the collieries throughout the kingdom. Many fatalities also take place by trams and tubs, and these may well be classed as preventible accidents. Last year no less than 61 persons were killed from this cause alone, whilst there is every reason to believe that with proper precautions scarcely any deaths should have taken place, but men will run into danger by neglecting to work according to rules laid down for their guidance, and the result is seen in the annual returns of the persons killed in our collieries.

Accidents from things falling from the sides of shafts and the surface are far more numerous than they ought to be, and for them there appears to be very little excuse. Shafts, even where they are walled, should be constantly examined, and anything at all loose removed. Explosions of gunpowder last year resulted in the death of 17 persons. This is not to be wondered at when we consider the careless and reckless manner in which powder is carried about and used in blasting by our miners. In some instances explosions have taken place by stemming or tamping, often from the high temperature given to the small quantity of air which is likely to remain amongst the particles of powder under and about the charge by the evolution of the latent heat from the extreme pressure. Here, again, greater care could not fail to considerably lessen the death rate caused by gunpowder.

It may be asked—What is the remedy that can be successfully applied to lessen the fatalities from the causes we have enumerated? The only remedy is the adoption of stringent rules, and seeing that they are carried out, for in no place more than a colliery is it essential to have the discipline more strict. Were rules adopted and carried out in the spirit in which we have indicated our yearly returns would show a marked decrease in the number of persons killed in our collieries from what we cannot but consider as preventable accidents.

OUR RAILWAY IRON ABROAD.

It is satisfactory to note that some revival appears to have at last taken place in the demand prevailing for our railway iron in the colonies and foreign countries. Thus the exports have moved on month by month to May 31 this year as compared with the corresponding periods of 1876 and 1875:—

Month.	1875.	1876.	1877.
January .....Tons	36,171	23,580	17,016
February	35,086	18,099	20,690
March	31,369	21,939	30,078
April	49,595	30,806	32,393
May	49,298	50,299	64,333
Total	201,219	144,723	164,510

The increase, it will be seen, has been continuous since February, and this fact is certainly cheering, as it would appear to show that the point of most extreme depression has now been reached and left behind. There is, however, one circumstance of very considerable gravity still to be noticed—that while the value of the 144,723 tons of railway iron exported in the first five months of 1876 was 1,312,220*l*., the value of the 164,510 tons shipped in the first five months of this year did not exceed 1,338,698*l*. In other words, the price of rails and accessories has fallen to a point at which it is a matter of extreme difficulty to realise a satisfactory profit. While our rails have from the sheer force of cheapness been forcing their way into markets which have been for some time past either wholly or partially closed to them, this cheapness implies the execution of a large amount of work with a very scanty return on the credit side of the ledger. Still, the British iron trade appears to have once more shown itself capable of dealing with foreign competition, and that is something, even if the profits realised of late by our ironmasters have been comparatively moderate.

We have on more than one occasion called attention to the improvement which has been noticed in the demand for our railway iron in the United States, and this improvement was not without importance in May. In that month we sent the Americans 1522 tons of our rails, while our corresponding exports in the same direction in May, 1876, were only 2 tons, and in May, 1875, 1283 tons. In the five months ending May 31 this year we sent the Americans 2483 tons of our rails, the corresponding exports in the same direction in the corresponding period of 1876 having been 96 tons, and in the corresponding period of 1875 13,888 tons. The large increase in the American demand in May would appear to indicate that we are just forcing our way a little again into the American iron markets. Enormous protective tariffs have been imposed by the United States Congress to drive our iron out of the Great Republic, and there has also been a vast development of American metallurgical industry; still, notwithstanding all this, we exported our railway iron to the Americans in May at the rate of rather more than 18,000 tons per annum, and this is a circumstance of some significance. It is, however, the animation of the colonial demand which has principally helped up this year's figures. Thus, in the five months ending May 31, this year, 9175 tons of our railway iron were sent to British America, as compared with 20,593 tons in the corresponding period of 1876; 33,759 tons to British India, as compared with 20,509 tons; and 28,325 tons to Australia, as compared with 12,611 tons. It will be seen that although the British American demand has been rather languid (and in the present condition of the Canadian railway interest we could not expect to witness any other result), there has been a greatly increased consumption of our rails this year on British Indian and Australian account. The Russian demand for English rails has also been active this year. The shipments to Russia in May, 1877, were much heavier than in May, 1876, and in the five months ending May 31 this year they attained an aggregate of 27,030 tons, as compared with 8913 tons in the corresponding period of 1876.

THE MINERS OF THE FOREST OF DEAN.

There are certain peculiar privileges belonging to the Royal Forest of Dean, nearly the whole of which belongs to the Crown, whilst there are some disadvantages that in all probability more than counterbalance them. Miners who were born within the four corners of a certain township can claim a certain quantity of mineralised ground on which to sink to and work coal, but this privilege does not appear to work particularly well, for the workmen engaged at the collieries are about the worst paid we have. The area of the coal field is about 34 square miles, with 15 seams of coal, only eight being of a thickness of 2 ft. and upwards. The scenery is certainly in parts beautiful, the eastern ridge of the carboniferous limestone overlooking the vale of the Severn, commanding the escarpment of the Cotteswold Hills of Gloucester and Somerset. On the opposite we have the Vans of Brecon, 2700 ft. in height, with the ranges which mark the northern boundary of the South Wales coal field. With all these beauties it appears that there has for some years been a serious want, which it is in the power of the Government to clear away, and which would put money into the public till. There is a great want of house accommodation, not in consequence of colliery owners and others being unwilling to build, but because the Government will not sell the necessary land. The consequence is great overcrowding and defective sanitary arrangements, whilst the development of the minerals is retarded. This state of things has existed for a long time, and was brought under the notice of the Select Committee which sat on Dean Forest in 1874, and to the recommendations of which we drew attention at the time. The matter has now become more urgent than ever, and was brought before the House of Commons on Friday last by Colonel KINGSCOTE, who forcibly urged that it was expedient that further facilities should be given by the Commissioners of Her Majesty's Woods and Forests to enable the inhabitants of the Forest to purchase waste or other land belonging to the Crown for building or garden purposes, as provided by Act 10 GEORGE IV., c. 60. It was pointed out that not only was there great overcrowding, but that miners and labourers had to walk great distances to and from their work in consequence of the want of house accommodation. Colonel KINGSCOTE blamed the Commissioners for the unsatisfactory state of things which existed, for they had made no effort to provide the required accommodation since the mineral began to be worked by providing cottages for those employed in the mines. A remedy was wanted at once, and that could be provided if only 500 acres of land were sold, at 60*l*. an acre, which would put 30,000*l*. into the pocket of the Crown.

The subject did not excite that attention that might have been expected, for there was no reply on the part of the Government, and the House was counted out. Were such a state of things to be found in an ordinary mining district, owing to the unwillingness of a landed proprietor to sell, there would soon be a great outcery raised. At one time there might have been such a feeling, but our landed gentry now understand the value of coal, and are only too glad to sell it, drawing their 300*l*. or 350*l*. an acre for it besides the surface value. But our Governments present and past seem to care but little for the minerals which belong to the people, otherwise they would have done all they could to develope them for the nation's good. But instead of doing that the policy of the Woods and Forests have been such as to keep down production as much as possible. That such has been the case we have only to look back a few years as to the quantity of coal and ironstone that was raised within the Royal Forest. In 1868 the output of the collieries was 842,128 tons, whilst in 1866 it was only 619,805 tons—a falling off of more than 25 per cent. It is just the same with respect to ironstone, for it appears that in 1868 the quantity raised in the Forest of Dean alone was 160,722 tons, but last year there was raised in the Forest of Dean, Glamorganshire, Gloucestershire, and Somersetshire only 122,498 tons. We have, then, the by no means pleasing fact that whilst in all other districts in the kingdom there has been a very large increase in the tonnage of coal raised during the two periods we have noticed that in which the Crown is the sole owner has been the solitary exception to the rule.

In ironstone it is exactly the same, although the ore is most valuable, being the brown hematite which accompanies the carboniferous limestone, which nearly encircles the coal field, and was worked by the Romans during their occupation of Britain. This is certainly anything but creditable to past and present Governments, and it is high time that there was a complete change. There should be greater facilities for developing the minerals, whilst mineowners should be able to properly house their workpeople. Were this done the miners would be a much happier people than they are, and far more contented with their position; and instead of being about the worst off of any, they would be in every way equal to those in other districts. It is, therefore, to be hoped that Colonel KINGSCOTE will again bring the question of house accommodation for the miners of the Forest before the House of Commons, and with greater success, unless indeed the Commissioners of Woods and Forest move in the matter at once, as it is their duty to do.

BREACHES OF THE METALLIFEROUS MINES REGULATION ACT.

SUB-WEALDEN GYPSUM MINE (Mountfield, near Battle, Sussex).—At the Petty Sessions, held at Battle, on Tuesday last, the 12th inst., the managing director, Mr. William Finlay, upon the complaint of Mr. Joseph Dickinson, Her Majesty's Inspector of Mines, was fined:—

1st.—For neglecting to have the entrance to the upper working from the shaft, between the top and bottom of the shaft, properly fenced.

2nd.—Neglecting to have attached to the steam-engine used for raising and lowering persons a proper indicator (in addition to any mark upon the rope) to show to the person working the engine the position of the cage or load in the shaft.

3rd.—Allowing in a case or cannister more than 4 lbs. (to wit, 6 lbs.) of gunpowder to be taken into the mine.

4th.—Neglecting to have the name of the owner or agent of the mine appended to an abstract of the Act posted up in legible characters in some conspicuous place at or near the mine, where it might be conveniently read by the persons employed in the mine.

The magistrates, Thomas Papillon, Esq., Col. Lewis, and B. W. Combe, Esq., imposed a fine of 5*l*. for the first and 1*l*. for each of the other offences with costs, including 1*l*. towards the advocate's fee, Mr. Charles D. Jones, solicitor, Hastings, for conducting the cases.

THE COAL MINES ACT.—Under a section of this Act any person who is the owner, agent, or manager of any mine to which the Act applies, or the father, son, or brother of such owner, agent, or manager, is prohibited from acting as a court or member of a court of summary jurisdiction in respect of offences under the Act. The operation of this restriction was inconveniently exemplified at Bury, Lancashire, on Thursday last, the 14th inst. The Inspector of Mines of the district as plaintiff, and the manager and the agent of Hagside Colliery, Radcliffe, as defendants, together with their advocates and witnesses were present respecting certain charges under the Act. On the commencement of proceedings, however, it appeared that of the two officiating magistrates one at least, from his connection with coal mines, was prohibited from acting. The cases could not be proceeded with, and were adjourned till next week.

BRITISH DYNAMITE COMPANY *v.* KREBS AND COMPANY.—An action was brought before Mr. Justice Fry to restrain the alleged infringement of a patent granted in 1867 to Mr. Newton, and subsequently assigned to the plaintiff company, for the rendering of nitro glycerine unexplosive during transit and storage. The defendant company are the manufacturers of lithofracteur, and it is alleged that lithofracteur was simply dynamite rendered innocuous by the process patented in 1867. The defendants denied infringement, and set up a plea of prior publication. The hearing of the case occupied four days, and at its conclusion the learned Judge gave judgment in favour of the plaintiff company, and granted them a perpetual injunction. Mr. Aston, Q.C., Mr. Cutler, and Mr. Chester appeared for the plaintiff; Mr. Cotton, Q.C., Mr Nalder, and Mr. Macrory for the defendant, who have thus to pay the costs.

THE JOINT-STOCK COMPANIES AMENDMENT BILLS.—The uninitiated must have been somewhat perplexed at the information contained in the notices of Parliamentary matters to the effect that there are two Bills for amending the Companies Acts, and that a proposed measure other than Mr. Chadwick's was read a second time in the House of Commons. This last Bill emanates from the Board of Trade, and is introduced by Mr. Edward Stanhope, the Parliamentary secretary of that department. The Government seem to have prepared a measure which may prove a stopgate in case Mr. Chadwick's Bill should not receive attention this session. A Select Committee has recently been appointed to enquire into the working of the Joint-Stock Companies Acts, &c. A measure framed upon the suggestions offered by that committee upon the completion of its labours would surely be more in accordance with public requirements than a series of patchwork measures in the interim.

THE WEIG FACH COLLIERY EXPLOSION.—Our readers will probably remember that on March 8 a terrific explosion of fire-damp occurred in the Forest Fach Colliery, the property of Mr. Thomas Glasbrook, situate near Swansea, when no less than 18 poor fellows lost their lives. On Wednesday last Mr. Benjamin Thomas, the underground manager of the colliery, was charged before the Swansea magistrates for an offence under the Mines Regulation Acts, for not having supplied sufficient ventilation to the said colliery. Mr. C. H. Glascodine, solicitor, appeared for the prosecution, and Mr. W. R. Smith for the defence. Two or three witnesses were examined on the part of the prosecution, including Mr. W. E. Wales, the Government Inspector of Mines for the South Wales district, and he gave it as his opinion that the ventilation of the mine was not sufficient on the day in question. Mr. Smith, on behalf of the defence, said that even a limiting the evidence there was no case to answer as against the defendant, but the Bench over-ruled the point, and said that in their opinion there had not been sufficient ventilation provided for the mine. Mr. Smith then said he would go into the case, and call rebutting evidence; but Mr. Grenfell, one of the magistrates, having incidentally mentioned that he was himself a colliery proprietor, Mr. Glascodine said that under the Mines Regulation Act he could not adjudicate, and rendered himself liable to penalty. Mr. Grenfell said he was not aware of the clause of the Act, and would at once withdraw from the case. Under these circumstances the case was adjourned for a week.

GOLD IN AUSTRALIA.—Up to the end of March the exports of bar gold from Victoria amounted to 93,577 ozs., which is over 45 per cent. less than in the corresponding period last year, when the total was 171,738 ozs. The Government has dispatched prospecting parties to various parts of the country to endeavour to discover new auriferous reefs, and the Melbourne Argus states that reports have been received from some of them; but, judging from the nature of the information afforded, it does not appear that much good has yet been attained. The same paper also publishes statistics which show that on Dec 31 last there were in the colony 41,910 miners, of whom 26,558 worked alluvially, and 14,452 quartz miners. The deepest shaft yet sunk is 1930 ft., and the approximate value of the mining plant is nearly two millions.

COAL AND IRON IN THE UNITED STATES.—There appear to be an over-production of coal in Pennsylvania, and sooner or later it must be reduced, or prices will be reduced instead. The iron trade has been dull in the Pittsburgh district, but the steel manufacturers are generally busy. This is owing to the low prices current for steel, in consequence of which it is largely taking the place of iron for many purposes. The manufactured iron trade is in a dull condition in the Pittsburgh district, and there is no prospect of any improvement being witnessed until the fall trade sets in. Not only is the demand light at unremunerative prices, but the labour question continues unsettled. Upon the New York market steel rails are quoted

at the mills at $47 to $50 per ton currency; and iron rails at $35 to $36 per ton currency. The managers of the St. Albans Rolling Mill, Vermont, are about to commence the manufacture of steel rails, and have been introducing appliances with that object. An 8-ft. vein of coal has been discovered near Susquehanna Station, in Susquehanna county, Pennsylvania, on the line of the Erie Railroad. Seamless steel wheelbarrows are now being made at Harrisburgh, Pennsylvania. An order has been received at Pottsville, Pennsylvania, for 1000 tons of rails for a North Carolina railroad. The Bethlehem Iron Company, Pennsylvania, has also received an order for 1000 tons of iron rails. The Altsona Rolling Mill, Western Maryland, has resumed operations. The English undertaking formed under the style and title of the Southern States Coal, Iron, and Land Company (Limited) expects to have two large furnaces in operation in Tennessee by January, 1878.

REPORT FROM CORNWALL.

June 14.—Cornwall this week may be said to have been given almost wholly over to agriculture. Certainly in the chief mining centre of the West—the district of Camborne, Illogan, and Redruth—agriculture has held its sway for the nonce over mining. This is due to the fact that the Royal Cornwall Agricultural Society has been holding its meeting for 1877 at Camborne. The show has been large, and successful beyond precedent, and has very sufficiently proved that whatever may be the depression in mining in the county (and there is no sign yet of a change for the better in this) agriculture is flourishing enough. The show has, however, had its mining association also, for one of the most prominent objects thereat was the improved stone-breaker of Mr. Marsden, which has been exhibited in active operation. Mr. Holman, of Camborne, likewise exhibited his horizontal engines; and engines of various kinds, chiefly portable and vertical, were shown by Mr. Hindley, of Bourton; Messrs. Clayton and Shuttleworth, Lincoln; Messrs. Marshall and Sons, Gainsborough; and others. Moreover, among the exhibitors were the Nobel Explosive Company.

And this reminds us to recur to the report of Dr. Foster, to which we drew attention last week, and to his important remarks in reference to the accidents of 1876, on the use of explosives. There were only two fatal blasting accidents. One of these was due to neglect on the part of a lad who forgot to "round" to the level below while blasting in a winze. The other occurred in the use of tonite, a charge of which was being rammed into a hole with an iron bar. And here Dr. Foster calls attention to a serious defect in the Act. While it is illegal for anyone to ram down the first part of the tamping of a hole with an iron bar there is no provision against an iron bar being used on an explosive itself. Of course, this was never intended. It was stated by the Cotton Powder Company that the tonite would not explode unless a cap was used. The Inspector, however, is of opinion that the charge did explode without a cap, and blames the company for the circular of instructions which it issued as "misleading and indiscreet." Misleading, since he holds that the charge did explode without the cap; and indiscreet, since it told miners "it did not matter how roughly they used an explosive." "An explosive to my mind," he continues, "is invariably dangerous, and should always be handled with caution.

Dr. Foster's principal references to the accidents which arise in course of blasting are, however, to be found under the non-fatal section: 33 persons were injured from this cause in 1876, as compared with 21 in 1875; and the accidents are classified according to the explosives in use, as arising—three from tonite, 13 from dynamite, and seven from gunpowder. However, no conclusions are drawn from these figures as to the safety of these explosives and Dr. Foster contents himself with a classification and analysis of the different accidents thence arising. There has been so much discussion concerning dynamite of late that it may be as well specially to note what he has to say under that head. One of the chief points is his pointing out that though by the use of dynamite the danger connected with tamping may be avoided, "new sources of accidents are introduced to which workers with gunpowder are not liable." Thus he shows that great care must be exercised in handling the detonators. His remarks, however, are chiefly valuable in relation to non exploded holes, and the dangers arising from exudation of the nitroglycerine. The whole of the dynamite in a charge does not always go off when a hole is fired, and some occasionally remains ready to explode when struck with the pick or borer. Holes that missed fire with dynamite led to no less than six accidents, which "at all events should teach miners that they should adhere most strictly to the rules issued by the dynamite manufacturers, and so endeavour not to present any chance of a hole not exploding the first time." Four of the six accidents Dr. Foster believes can only be explained by the exudations of nitroglycerine through cracks and joints even to a distance of a couple of feet. The accidents from gunpowder Dr. Foster attributes to sparks either from quartz or pyrites. There is one mine in Cornwall in which the safety fuse is not used—Trevannance, St. Agnes; "the miners employed there still adhere to the needle and train of powder contained in a rush."

REPORT FROM THE NORTH OF ENGLAND.

June 14.—No alteration of any practical importance has transpired during the past week in the Iron and allied trades of the North of England. Speaking generally, the *status quo* is maintained in everything except the price of pig-iron, which is about 3*d.* or 4*d.* per ton cheaper than it was last week, makers quoting 41*s.* 6*d.* net for No. 3, and other qualities in proportion. The quantity of iron changing hands during the past few days has, however, been inconsiderable. There is no real accretion of demand, and although the requirements of home consumers are not falling off, they are not quite what might be expected at this season of the year. Exports are quite up to the average of previous years, especially for coastwise consumption; but the general tendency of the trade in this, as in other matters, is rather in the direction of increased slackness, and makers have to cut their prices exceedingly fine to have a chance in competition with other ironmaking districts established on a competitive basis. The notice recently given by the Cleveland Iron Manufacturers' Association as to a further reduction in the wages of finished ironworkers has not yet reached maturity, but it will do so in the course of a few days, and meanwhile a meeting will be called to determine whether or not any alteration of the existing wage rate should be demanded. This decision will probably be affected mainly by the result of the trade done during the past three months, which will be exhibited in the course of a few days by the accountants to the Board of Arbitration, who are now collecting the materials for their report. On the whole the probabilities are the prices will be found to have declined. Plates, at any rate, which are the staple of the North of England, have declined to the extent of 2*s.* 6*d.* per ton during the past few weeks, while bars and angles have maintained a pretty uniform price. Of rails the output is now so small that they are hardly worth consideration. Last quarter it was only some 7000 tons, and the chances are that for the current three months it will be found to have been still less.

The award of the umpire in the Cleveland mining arbitration only came to hand on Friday, and although I was able in my last week's letter to indicate its general effect, I may now explain that Sir James Stephen based his award altogether on the fall that has taken place in the selling price of iron since the previous arbitration. This was admitted by the men themselves to be the proper test to apply to the question and Sir James has not hesitated to adopt it, even to the exclusion of other elements that have seemed to the owners quite as relevant and full of importance. The award has naturally excited a great degree of dissatisfaction among the miners, who never expected a larger reduction than a half-penny per ton. Each Cleveland ironstone miner is calculated to turn out 5½ tons of ore per day, so that the reduction of a penny per ton will represent a difference in his earnings of nearly 3*s.* per week. In the meantime the output of ironstone from the mines of Cleveland continues very large. In spite of the closing of some of the least remunerative mines, such as Kilton and Stanghow, the miners appear to be working so much better than they did when earning a higher rate of wages that the output of ironstone is as great as ever. Enormous stocks continue to be accumulated; in some cases many thousands of tons have been stored on every available inch of ground about the works, and at the mines the same state of things is found to prevail.

The quantity of coke sent out of the Great South Durham coal field continues quite as large as ever. Cleveland takes more coke for her metallurgical purposes than ever, the output of iron being in excess of any previous period. The total quantity of coke now being produced in South Durham is at the rate of 4,500,000 tons per annum. Of this fully 2,500,000 tons are consumed in the Cleveland district. The residue goes into North-West Lancashire, Cumberland, Sheffield, and is otherwise disposed of. Final arrangements have now been made for the cokemen's arbitration, which will take place at Newcastle, on Friday next, Sir James F. Stephen sitting as umpire. The issue of this arbitration will be of exceptional importance, inasmuch as it will determine the status of coke workers in the time to come. The cokemen themselves claim to be superior to, and apart from, other surface labourers; but this claim, so far from being allowed by the owners, is entirely repudiated, and hereupon the two join issue.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

June 14.—The demand for finished iron continues to be excessively languid. Purchases that satisfy only immediate necessities are the rule. Customers will not venture upon buying large quantities for fear of having stocks left on their hands for some time to come; and, as a result, mill and forge owners are in many cases dependent solely upon orders received day after day for work. In not a few instances prices are almost as low as they have ever been, yet this does not greatly encourage new business. Common pigs are no firmer than is inferior finished iron. Part mine is easy at 3*l.*, and cinder qualities are freely offered at 2*l.* 7*s.* 6*d.* Prices are kept down by the competition of other districts. Nor is all-mine pig remarkably firm. In times of good trade double the number of furnaces now blowing would be in blast. Coal is not being sold with greater freedom than has marked business for months past. Neither furnace nor forge qualities are in anything like the demand that they should be. Consequently the amount of fuel brought to bank is much below the average, and depressed trade and the rising of the underground flood is the explanation why many collieries are altogether idle.

Colliers in the Bilston, Wolverhampton, and adjoining districts continue to migrate to other coal fields, more particularly Bagillt, North Wales. They are earning 5*s.* or 6*s.* for a day of eight hours. Not a few of the miners, however, who were among the first to go to North Wales have returned, the new terms not satisfying them.

The report of John Bagnall and Sons (Limited) shows that the year's working has resulted in a loss of 14,972*l.* 16*s.* 5*d.* This, after writing off 3062*l.* for depreciation of colliery plant and exhaustion of freehold minerals, and 5267*l.* payment of debenture interest. The unfavourable result is attributed to the continued extreme depression in trade. Short hours and foreign competition have also, the directors state, "rendered it very difficult to keep the works employed even half time."

The Pelsall Coal and Iron Company (Limited) annual meeting was held on Wednesday, in Birmingham.—Mr. B Bloomer, chairman and managing director, presiding. The balance sheet showed a loss on the year's transactions of 5086*l.* 14*s.* 7*d.* Upon the motion for its adoption, an amendment was moved by Mr. J. B. Bissell to refer it to a committee of investigation. The amendment was carried by a large majority, and the meeting was adjourned to July 18. In the course of the proceedings, Mr. Bissell asked for information as to the amount paid by the company for unremunerative labour. The Secretary said they paid in salaries 3747*l.* 14*s.* a-year, which comprised the following items:—Mr. Bloomer, as chairman and managing director, 1000*l.*; five directors, 150*l.* each; colliery manager, 500*l.*; secretary, 300*l.*; forge manager, 202*l.*; accountant, 214*l.*; mechanical engineer, 208*l.*; five clerks, 360*l.*; and Mr. F. Bloomer, 100*l.* The chairman also had his house, and was paid 350*l.* for travelling expenses, for which he kept his own horses and vehicles.

The striking feature on the local Stock Exchanges is the continued low price of shares in coal and iron concerns. Alike the 20*l.* (6*l.* paid) shares of the Cannock and Huntington Colliery, and the 20*l.* (12*l.* paid) shares of the Hamstead Colliery are offered at 3 discount; and the 10*l.* (7*l.* paid) shares of the Spon Lane Colliery are offered at 5 discount. A little more strength is manifested by the Sandwell Park property, holders standing at 16*l.* 10*s.*, and buyers at 1*l.* less. The making known of the fact that the Pelsall Coal and Iron Company has lost over 500 *l.* on the year has, of course, prejudically influenced that property, which is now offered at 10 discount; but buyers demand a further 2 discount. The 10*l.* fully-paid shares of John Bagnall and Sons are offered at 3*l.* 10*s.*, but purchasers hold off for another 5*s.*

In North Staffordshire the number of finished ironworks running short time is increasing; and unless trade improves this number will go on increasing. The hoop trade shares in the general dulness. Most is being done in plates. Pig iron is very quiet, and buyers are holding off until Quarter-day in the hope of obtaining even lower rates than now prevail. Fuel for manufacturing uses is in fair demand.

Mr. William Blakemore, F.G.S., mining engineer, of Wolverhampton, incorporated in a paper which he read on Tuesday, last week, at the Midland Institute, in Birmingham, to the members of the South Staffordshire and East Worcestershire Institute of Mining Engineers (which is published fully in another column of this day's Journal), the most recent information touching the result of sinkings in the west and north-west of the Staffordshire coal field. He pointed out that the lower coal measures had there been found in all the trials, with one exception. Nor had any of the important trial holes either at the West Cannock, Cannock and Huntington, or Fair Oak Collieries met with anything which would indicate the proximity of the fault or termination of the coal measures. It was certainly strange that the enterprising Fair Oak Colliery Company, after an expenditure of upwards of 100,000*l.* in sinking to a depth of about 320 yards, should in their first sinking—and this was the exception to which he referred—have failed to discover coal. They had, however, as was known, been led to success by a sinking carried down not far away from the first. Several coal seams had been sunk through within 100 yards of the surface. At the depth of 98 yards the shallow coal, of good quality and 3 yards in thickness, was passed through, and within the past few days the deep coal had been found. With reference to the latter seam, Mr. Blakemore pointed out that a peculiarity existed which is a new feature in the Cannock Chase district—it was scarcely 4 ft. thick. About 7 yards above this there was another coal upwards of 3 ft. thick. This some persons might be inclined to think was a splitting-up of the deep coal, but Mr. Blakemore believed that the seam was really the roof coal which ran generally above the deep coal in the northern part of the coal field, but which in this locality had thickened. He sincerely hoped that as the company's mining operations extended in the westerly direction the deep coal would be found of the usual thickness. Mr. Blakemore had prepared sections of what had been done at the Cannock and Huntington, and also at the Fair Oak Collieries. These showed that though the West Cannock Company's sinkings were nearer to those of the Cannock and Huntington Company than the Fair Oak second bore hole was, yet that the minerals at Fair Oak could be easier correlated with those of Cannock and Huntington than could the minerals of West Cannock. This the author pointed out would seem to indicate that the trial holes of Cannock and Huntington and Fair Oak were in the same angle, and that the mines found in the one place would be found also in the other. Describing the points of resemblance, Mr. Blakemore called attention to the nature and thickness of the red ground and pebble beds overlying the coal measures. At Cannock and Huntington the thickness of these deposits was 124 yards, and at Fair Oak 125 yards. From the bottom of the red ground the first coal was at the former place 21, and at the latter 15 yards, whilst the two coals were of nearly equal thickness—5 ft. 6 in. Within a distance of 20 yards below there were in each hole two thin seams of coal, also of similar thickness. The nature of the ground above and below these coals corresponded, and it was highly probable that if the bore at Cannock and Huntington had been carried a few yards lower another coal would have been found 5 ft. thick, similar to the one at the bottom of the successful Fair Oak trial hole. And although there were here unmistakeable signs of extensive denudation, yet the result of these numerous explorations on the western border of the Staffordshire coal field tended to show how great was the quantity of coal secured to the Staffordshire district by recent proofs in the westerly and north westerly directions. There was at present, in the absence of further proof, no telling how far the coal measures might run to the west. Mining engineers in Staffordshire should watch with more than usual interest the operations on the Cannock and Huntington estate, for they would have an important bearing on this part of the coal field. In the light of recent researches little encouragement was found for the theory that the Staffordshire coal field lay like an isolated cliff, around which the fierce ravages of denudation had shown on every side the debris of neighbouring rocks sweeping away the coal measures and permians from the Staffordshire coast line, and leaving that field as a disintegrated island of mineral wealth.

Some improvements have been proposed by Mr. G Du Vallon, of Birmingham, in the construction and arrangement of valves of steam-engines in such a manner that instead of having as usual to set the steam-valve crank or eccentric a certain number of degrees over 90 in advance of the piston crank, in order to give the valve its proper lead, and to shift the said crank to a corresponding position behind the piston crank when required to reverse the engine, the valve crank can be set at once for all 90° in advance of the piston crank, the steam-chest being made capable of being shifted round the centre of the crank shaft a number of degrees equivalent to the amount of lead desired in a direction to the left of the cylinder, if the crank travels from left to right, and to the right if the crank travels from right to left, thereby effecting the reversing when required. For this purpose his invention consists in the combination of two valves applicable generally to steam-engines with cylinders, and more particularly to steam-engines with several cylinders (two, three, or four) in which the pistons are directly connected with the cranks without piston rods, whether the cylinders be single or double acting. One of such valves (the steam-valve proper) is set in motion by the crank shaft direct, and its face, instead of sliding or revolving against a fixed surface or seating (as usual) in which the cylinder ports are cut out, is made to slide by rotary motion on the face of a circular valve in which certain ports are cut out, corresponding in number to the number of cylinders if single acting, or twice the number if double acting, and communicating ultimately with the respective ports of the said cylinders, but so extended and arranged on the above-mentioned face that, combined with the motion of the rotating valve they may give to the latter the proper amount of lead for each cylinder respectively. This second valve, which constitutes an important feature in the combination, is provided with a spindle which prolonged to the outside through a stuffing box carries a lever by which the valve can be slightly turned on its axis, and the lead thereby altered and reversed as required, each port in the valve still preserving its communication with the same cylinder port.

Since our last report we have been shown some specimens of manufactured iron made from New Zealand pig-iron. The pigs were smelted from metallic sands found along the shores of New Plymouth, in Taranaki, where the New Zealand Titanic Steel and Iron Company have erected two blast-furnaces. The sample pigs were sent over to Messrs. T. W. and J. Walker, of this town, who entrusted them to the Shelton Bar Iron Company, at Stoke-upon-Trent, for testing purposes. The pigs, which were 78 lbs. each, on being broken up exhibited a good mottled fracture. Being less in size than the native pigs, they worked up in the puddling process sooner. The yield was at the rate of 1 ton 3 cwts. 3 qrs. 14 lbs. of pig to the ton of puddled bar produced, or nearly 20 per cent. loss. On being worked in the bar mills, pieces were cut off for testing purposes. The hot test showed the iron free from red shortness, and the cold test showed a freeness from cold-shortness. The tensile test was the British Admiralty requirement for "best best" bar iron—22 tons per square inch, and it came out by 1 and 1½ ton above that. The specimens are considered remarkably well adapted to engineering and smith work, and stood the tests exceedingly well. It will thus be seen that the finished bars made from these pigs, calculated on the 9*l.* basis of our own district, would be worth about 11*l.* per ton, and made, too, from common pigs. At Taranaki the price of the pigs is about 3*l.* 10*s.* per ton, so that it is feared the production of such metal out there will interfere with our Australian demand. Messrs. Walker, we understand, will be glad to show any gentleman the specimens at their warehouse in Temple street. —*Wolverhampton Chronicle.*

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

June 14.—Very little of an encouraging nature can be said of the Iron Trade this week. True it is that there are some decent orders in hand, chiefly for rails, and clearances show no abatement, but prices are still very low, and these militate seriously against manufacturers. Orders are being executed for Norway and Sweden, for British India and North America, and for Brazil, and parcels are now and then dispatched to Spain, Portugal, and Italy. There is a slight movement in the foreign demand for bar iron; and although the great railway companies are using steel in preference to iron, yet there are several continental countries and our own colonies who are tolerably good customers for iron rails. As usual, there is a fair amount of activity observable at the steelworks. The Tin-Plate Trade is dull, and unaltered materially. The aspect of affairs in the Coal Trade, speaking of the relations between master and man, is certainly unsatisfactory. It is manifest that, in the present unremunerative state of the trade, some course must be taken by employers in lessening the cost of production, or other means whereby business can be made profitable must be carried out. The Aberdare and Plymouth colliers have settled the question, so far as their case is concerned, by accepting a reduction of 10 per cent. This, however, is practically a departure from the sliding scale. There are two proposals mooted among employers—one is to decrease the output, and the other is to alter the sliding scale, enforce a reduction, and endeavour to get the men to return to the working hours of 1869. A meeting of masters has been held privately, and it is believed that the above points were mooted. The men have held a delegate meeting at Merthyr, and a resolution to the effect that they regret that some of the masters have evaded the sliding scale agreement, and that the men would not be parties to such a violation except on a proper notice being given, as contained in the agreement. They also decline to return to the working hours of 1869. The meeting also condemned the conduct of the Aberdare and Plymouth men, and expressed sympathy with the workmen in the Ogmore Valley, who are resisting a 10 per cent. reduction. The old representatives on the Conciliation Board were re-elected by a large majority. Mr. T. Halliday was at the meeting, which was adjourned to the 25th. As to the present actual condition of the trade, the demand for steam coal continues good, especially for foreign exportation; indeed, as figures quoted below will show, Welsh coal is obtaining increasing favour abroad, and house qualities are rather a dull sale. Patent fuel is unaltered.

Annexed are the iron, coal, and patent fuel shipments for May, compared with those of the corresponding month of last year:—Cardiff, 8623 tons, against 11,239 tons; Newport, 9729, against 7771 tons; and Swansea, 1071, against 303 tons. The following are the principal shipments made, with their destinations:—Bordeaux, 1015 tons rail; Gothenburg, 1956; Aarhuus, 917; Carlshamn, 950; Iquique, 600; Kurrachee, 3492; Libau, 1130; St. John's, 500; Newcastle (N.S.W.), 1450; Sandswall, 640; Rockhampton, 693; and Montreal, 957 tons rail. Coal shipments foreign were:—From Cardiff, 343,130, against 300,267 tons; Newport, 53,878, against 44,933 tons; Swansea, 59,037, against 58,863 tons; and Llanelly, 5828, against 9473 tons. Coastwise clearances were:—Cardiff, 66,648, against 85,542 tons; Newport, 68,654, against 61,429 tons; Swansea, 27,604, against 27,175 tons; and Llanelly, 12,283, against 15,572 tons. The shipments of patent fuel were:—Cardiff, 9556, compared with 6118 tons; Swansea, 12,522, compared with 21,608 tons; and Llanelly *nil*, against 172 tons. Cardiff is exceedingly busy.

The Ystalyfera Iron Company have given notices to their colliers and miners of a termination of contracts. A reduction of 2*l.* per ton in the tonnage of coal at the New Tredegar pit, which will take effect in certain cases has caused some dissatisfaction.

A case having reference to the Powell's Llantwit Company has come before Vice-Chancellor Bacon, in the Chancery Division. A motion was made for the payment of 34*l.* out of the assets of the company by the receiver and liquidator appointed by the Court,

The Vice Chancellor said it was clear that the sum named must be paid to the original landlord for rents and royalties, and that due provision should be made for those rents and royalties for the future. Liberty would be given to apply for a winding-up order, and the stoppage of the works.

Mr. Benjamin Thomas, underground manager at the Weigfach Colliery, has been summoned at the Swansea Petty Sessions under the Mines Regulation Act, for not causing sufficient air to pass through the workings, &c., on March 8, when 18 men lost their lives by an explosion. The defendant's advocate argued that his client was not aware of the prevalence of gas in the pit. In consequence of its being stated that one of the two magistrates who heard the case is a colliery proprietor it will have to be heard over again.

A large and influential meeting of coalowners and brokers was held on Thursday, at the offices of the South Wales Colliery Company, Bute Docks, Cardiff, to take into consideration the desirability of forming a trade protection association. It was considered that greater protection could be given to coalowners and shippers by establishing a local protection association, with a committee of management selected from their own body, through whom a large proportion of the trade was carried on, than could be given by the National Trade Protection Association now in existence. The scheme having met with general approval, a committee was formed to ascertain what support such an association would receive, and report to a future meeting.

THE TYNEWYDD DISASTER.—A correspondent writes:—"In reading over the list given to Mr. Le Sage of gentlemen who are to receive medals in commemoration of services rendered during this above-named calamity, I was much astonished to find the names of several gentlemen who rendered assistance in rescuing the entombed men, omitted; but I sincerely trust that such omission is not an intentional act of those from whom Mr. Le Sage gleaned the information. The gentlemen I refer to are—Messrs. Riches, engineer, T.V.R.; H. W. Lewis, C.E., Treherbert; McMurtrie and Lax, Llwynpia; E. Richards, Cwmclydach; Thomas Woon, and T. Curnow, Treherbert. These gentlemen have been repeatedly acknowledged through the Press as being among the foremost of the rescuing band, especially Messrs. Riches and H. W. Lewis, who have been to my knowledge highly eulogised by members of the Porth committee, and Messrs. McMurtrie and Lax, who, on first hearing of the occurrence, immediately supplied the colliery with pumps and men to make the first important start at getting out the water, while others who only put in an appearance a single night or a day have been mentioned among the recipients."

REPORT FROM THE FOREST OF DEAN.

June 14.—The ruptures at East Slade and Lightmoor Collieries reported last week, still continue. Indeed, the Lightmoor breach has widened into a strike, the East Slade rupture being viewed as a lock-out. Things look very discouraging just now, and the apparent contradictions and actual confusion between employers and their workmen are truly lamentable. Mr. E. Crawshay repudiates the pledge given by the Chairman of the Masters' Association in relation to the two months' experimental reduction at Crump Meadow Colliery, and declares as his justification that he had not seen the other masters for three months. We are unable to say whether he (Mr E. Crawshay) is a member of the Association at present or not, or whether he has altogether withdrawn himself (personally), but it was understood that his brother William represented the Messrs. Crawshay and Sons' firm by his presence at Cinderford Town Hall with the federated masters on Feb. 12, when they met a deputation of the working colliers, and if Mr. William Crawshay was there in a representative character, it seems in accordance with the rules of clubs in general to expect of members to conform to resolutions passed by a majority of those meeting for business, supposing a quorum to have been present, as in the absence of a quorum a resolution would be null and void. Now, the question is—Was the Crump Meadow reduction arrangement submitted to the Masters' Association for approval and confirmation? If the matter was settled by a masters' meeting, of course the books of the club will show it, and the chairman may appeal to them with confidence, but anyhow the matter requires explanation, for until that be done outsiders and the general public will remain in a thick fog of bewilderment.

As to the present disputes, there does not appear at the time we write any very certain prospect of settlement. We presume the East Slade men will appeal to the County Court for a week's wages, or such was their intention according to the last information received. The Lightmoor men have met the Crump Meadow men a time or two for conference, and the former employees met again yesterday, and sent a deputation to the goffers to represent their proposals to the master, and request an interview early next week, if not before, and another meeting was arranged to be held at the time we write, but the results of which, of course, we cannot report. But it is said that both sides are determined not to yield; and, should the struggle be long continued, we fear the consequences will be serious, as much exasperation is felt by many of the working men, for already half-starvation is among them; so that if matters become worse, who can tell what the end will be? Prudential precautions should certainly be thought of in time by those whose duty it is to care for such things as public safety. The tinplate trade is very slack, and work very irregular, and all businesses seem just now to be out of joint.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

June 14.—So far the week has been a rather quiet one in almost every branch of trade, and the fine summer weather will, no doubt, markedly affect the consumption of coal; this, however, will not be seriously felt in some districts so long as the miners continue to strike in different counties. First, we have had the turn-out in Newcastle, which does not appear to be as yet definitely settled; and now Lancashire is about to have a turn in opposition to a 10 per cent. reduction of wages. Derbyshire, on the other hand, keeps quiet, and the miners there are gaining from the folly of those who think that at the present time a strike can force up wages, or keep them at a point which leaves colliery owners no profit whatever. But if these men would look at the state of our markets they would see that with some 10,000 or 12,000 miners standing prices have in no way been affected, and if there should be as many more out next week coal will be fully as cheap as it is at the present time. Support, of course, is looked forward to from the National Association, of which the Member for Stafford is the President, but the experience of some of the miners in North Derbyshire last year was such as to place but little dependence on that rotten staff. Be that as it may, there is no doubt but the strike of the Northumbrian miners has been of considerable advantage to many of the inland colliery owners. Clay Cross shows to better advantage than usual so far as regards the London traffic, as does also several other collieries in the same locality. Steam coal moves off rather better, but prices are without any material alteration. The make of pig is about the same as it has been, and rates have undergone very little change in the Staffordshire and other markets. The foundries are doing moderately well in pipes and other castings.

There is a little more doing in one or two branches of the Sheffield trade, some fair orders having been given out for Australia and other of our colonies. Bessemer rails are not in such active demand as they were earlier on in the year, and it is questionable whether some of the Russian contracts will now be completed for shipment during the present season, seeing that everything has to give way to the war exigencies. A better enquiry has been made for some descriptions of cutlery, but as yet there has been no improvement with respect to the business doing with the United States, at one time about the best of our customers. Some of the crucible steel establishments are now better employed, and at one of them they are busily engaged in making steel wheels on a patented principle for colliery and other purposes, which are likely to come into pretty general use. In the South Yorkshire district the Coal Trade has kept up very well for the season, considering that we have reached the middle of June, when the consumption of household qualities falls off very much, but the strike in the North has certainly favoured the locality, whilst the men are working very steadily.

To-day at the Barnsley County Court the Judge gave his decision in a case which has caused a great deal of interest. It was an action brought by one of the Oaks widows against the executive of the Miners' Association to recover certain arrears of weekly pay, due in accordance with the rules in force at the time of the explosion. On behalf of the Association it was pleaded that the Association not being registered the action could not be maintained. His honor regretted that he was obliged to nonsuit the plaintiff. The decision will relieve the Association from heavy liabilities, but at the same time it cannot have the effect of adding materially to its reputation or inducing persons to become members of it. It is certainly no credit to a large trade society to have it publicly announced that whilst it repudiates its obligations to widows and orphans, yet it pays some hundreds of men and boys a weekly allowance at the present time for being on strike.

On Wednesday the Leeds Gas Committee accepted tenders for gas coal and cannel for the next twelve months. Contracts were entered into for about 100,000 tons of coal and 25,000 tons of cannel. The price of the former ranged from 5s. 6d. to 9s. 7d. per ton; and of cannel from 10s. 10d. to 15s. 6d. The average price of coal is this year about 2s. 6d. cheaper than when the contracts were let in 1876.

TRADE OF THE TYNE AND WEAR.

June 14.—The general trade of the district appears, on the whole, to be improving. The process is slow, but it certainly is improving. The most prosperous branch of the iron trade at present is the foundry. The founders of the district are able to compete with any others, as is evident from the fact that most of them are extremely busy. Cheap coal and iron, it is evident, are operating in the right direction, while the importation of Spanish iron ore of high quality for mixing with the Cleveland ores is also proving of great advantage. The Iron Shipbuilding Trade is good, both on the Tyne and Wear, most of the yards being quite full of ships, mostly of large tonnage. The largest vessel yet built on the Wear, the Durban, was launched on Tuesday from the works of Mr. James Laing; her gross tonnage is nearly 3000 tons. The Union Company of Southampton have purchased the vessel, and it is intended to run between that place and the Cape of Good Hope. The engines and boilers are constructed by Messrs. Hawthorn, of Newcastle. The Chemical Trade, which is a very large one on the Tyne, has improved vastly of late, and prices, which were very low, have advanced considerably. Extensive orders for chemicals have been received from America and other places. The Pig-Iron Trade continues to increase, and if it be correct, as supposed, that the consumption at present exceeds the production, better times may be looked for. At the moment, however, prices are drooping; still furnaces may be blown-out by those who are unfavourably situated for producing iron at the present low prices. The Manufactured Iron Trade continues as dull as possible, and even plates are dull. The Durham Coal Trade has been much improved by the strike in Northumberland, but that is happily ended now. Increased rates have been paid for steam coal, but most other coals continue at the dead level which has ruled so long, and those prices are quite unremunerative. So long as the production continues to exceed the demand this unsatisfactory state of affairs cannot be improved, but there is no doubt that the demand is more near to the output than it was at the commencement of the year, and we may expect that the laws which regulate trade will ultimately bring about a better state of things.

In Durham, the Houghton Colliery, stopped some time ago owing to a fire underground, has been re-started by 50 men. The last new colliery opened by Earl Durham, at Harrington, has been started coal working, about 180 men being employed. The Biddick Colliery, belonging to Sir George Elliot, was laid off some time ago, but it is to be re-started in a few days. It is also likely that the large works at Wheatley Hill will be again started in a short time. All this appears to point to a revival of trade, which we have already noticed.

It appears from the reply of Mr. Cross to a question of Mr. Vivian that arrangements have been made for rewarding miners and others for gallant conduct. This is satisfactory; the British miner is made of the same stuff as the British sailor and soldier, and it is only fair that each should be able to acquire decorations, and be recognised when they do any daring act in the discharge of their duty. Speaking from experience, we can assert that most miners enter into the workings of a mine immediately after an explosion without any consideration as to their personal safety, and this is quite as dangerous as the battle field, and requires also great physical powers to withstand the baneful effects of the after-damp.

The returns of the Government Inspectors of Mines exhibit some interesting facts in relation to the staple trades of the North of England. They show that the total quantity of ironstone raised in Cleveland for the year 1876 has been 6,564,101 tons, which is an increase of about 500,000 tons on the production of 1875. The most curious feature of this case may, however, be found in the fact that Cleveland now produces more than one-half of the whole of the ironstone raised in the United Kingdom, which for the year 1876 was only 12,159,580 tons. The truth is that a number of the older producing iron districts, such as Scotland, Cornwall, Staffordshire, and Wales, are going rapidly to the wall, and even in these worst of evil times Cleveland shows steady and unhalting progress. It must be exceedingly gratifying to all who are connected with Cleveland to learn that, in spite of failures and vicissitudes of no ordinary kind, the general progress of the district has not been sensibly checked by circumstances that have tended to shivel up the industrial prestige of other districts. It seems that, although there has been more coal produced in the Great Northern coal field during 1876 than in the previous year, fewer persons have been employed to produce it. Northumberland, Cumberland, and North Durham produced in 1875 14,042,822 tons of coal, and employed 50,070 hands; but in 1876 the produce of 14,135,101 tons of coal was the work of only 48,754 hands. The difference between the two years is not quite so marked in the great coal field of South Durham, where 58,622 hands raised 19,459,248 tons in 1875; and 58,380 men raised 19,513,856 tons in 1876. Altogether the number of hands employed in and about the Great Northern coal field in 1876 was 107,000, the aggregate yield of coal being about 33,000,000 tons.

NEWCASTLE INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—An adjourned special meeting of members will be held on Saturday. It is proposed to make some important alterations in the rules, the formation of a new class of members—to be called fellows—being the most remarkable innovation contemplated. Prof. A. S. Herschel, B.A., will read a paper on "A New Hand Gear, Assisted by Steam, for Starting and Reversing Winding-Engines, used in Belgium."

RAILS FOR RAILWAYS.—The invention of Mr. J. T. CLARK, of Augusta, Georgia, relates to compound rails consisting of two parts, a flanged base to be attached to the ties or other part of the road bed, and a cap fitting over the vertical web of the base so as to break joints, the joints between the cap pieces being located at points intermediate between the joints between the base pieces. The lower edges of the vertical flanges or webs of the cap are received in grooves in the upper surface of the base on either side of the vertical web thereof. The upper part or head of the cap rests on the top of the vertical web of the base, and is enlarged to approximate the form common in the head of a T-rail or an I-rail as may be desired; and is in some cases formed with a hollow of sufficient size to leave on one or both sides of the top of the base web a hollow or hollows, giving to the head of the compound rail a degree of elasticity which will reduce the battering or laminating effect of the wheels on the shoulders of the rail. Where great strength or rigidity is desired in the top of the rail the upper part of the cap may be made of such thickness as to leave but slight hollows, or to dispense with them entirely. The two portions of the rail are connected by horizontal bolts passing through openings which are elongated in one or both lengthwise of the rail to prevent the distortion of the compound rail under expansion and contraction resulting from variations in temperature. Each portion of the compound rail may be rolled of either iron or steel. It is preferred to form the cap portion of steel in order to increase the durability of the rail. This portion may be rolled by successive passes through grooves which approximate gradually to the required U-shape to adapt the cap to fit over the vertical web of the base; or it may be rolled more nearly flat at first and by subsequent rolling receive the required U-shape.

BOARD FOR EXAMINATIONS OF COLLIERY MANAGERS.

The Board for Examination of Colliery Managers in Mr. Dickinson's district continues to work satisfactorily. Without interfering with the functions of the examiners it maintains that supervision which was intended, and the examiners are apparently equally desirous of applying reasonable tests. The appointment of examiners is made annually by the board. Of those first appointed one resigned, and another died. Those now acting have been appointed thrice in succession. At the examination on Dec. 21 last 47 candidates presented themselves. Of these 25 belonged to the district: 20 passed, of whom 10 belonged to the district. The accounts given of the nature of the examinations have apparently done good. Intending candidates have thus been directed into the right line of study without being enabled to "cram," as the questions are varied at each examinations, and the holders of certificates of service have improved themselves by mastering the questions. Good practical men, perhaps best qualified for guarding against falls of roof and sides, which are the principal causes of accident, may it is feared be sometimes precluded from acting under the present system, and it is possible that in this respect the requirements may be working harshly.

The conditions laid down by the Board for this district enjoin that a candidate must be 21 years of age. He must have had three years experience in or about a colliery or mine, and he must be able to read and write. The subject fixed for examination is the knowledge necessary for the practical working of collieries and other mines under the Act in the North and East Lancashire or Manchester district, including all the provisions of the Coal Mines Regulation Act, 1872; and a practical treatise on the gases met with in coal mines and the general principles of ventilation, by the late Mr. J. J. Atkinson, published by A. Reid, Printing-court Buildings, Akenside Hill, Newcastle-on-Tyne. The examinations are held in December every year. Candidates desiring the authorisation from the Secretary of State to appear before the examiners should apply to Mr. Maskell Wm. Peace, of Wigan, Secretary to the Board.

In order that candidates may not be taken unawares they should, in addition to having practical knowledge, make themselves thoroughly acquainted with the Coal Mines Act and the special rules of the district; also with the information contained in the treatise named, even with the meaning of technical words, in case they may be referred to as a test of intelligence. The questions are varied at each examination; but to give candidates an idea of the nature of what will be required the following copy of questions which have been put by the examiners is supplied:—

JUNE, 1873.—1. SHAFTS.

1.—Describe the operation of sinking and securing a shaft through a surface of quicksand 10 yards in depth.
2.—What description of conductors is used in shafts?
3.—What is the approximate weight of a round hempen rope 250 yards in length, and 8 in. in circumference?
4.—By what number of short chains ought a circular cradle or flying scaffold to be attached to the bottom end of a capstan rope?
5.—Describe the process of laying a metal curb to support a metal tubbing.
6.—Describe the process of putting in metal tubbing.
7.—How would you send metal tubbing down a shaft?

2. VENTILATION

8.—What is fire-damp, and by what other names is it called?
9.—What is atmospheric air?
10.—What is carbonic acid, and by what other names is it called?
11.—What are approximately the relative weights of each, that of air being 1?
12.—When is fire damp most explosive; and should it continue to burn in the lamp after drawing down the wick, how would you act?
13.—Describe the Stephenson, the Clanny, and the Davy lamp, and say which you consider the safest, and why?
14.—What means are in use to produce ventilation in mines?
15.—Ventilate the workings shown by the accompanying plan, without using any air-doors except those shown; the drawing rods are distinguished by dotted lines.

3. WORKINGS.

16.—What is meant by "long work?" Show this by a sketch.
17.—What is meant by "pillar and stall" work? Show this by a sketch.
18.—Describe the process of boring against an old working or waste, and state what precautions you would use.
19.—The roof of a roadway is very destructive of timber and is almost impossible to support, what course would you try?
20.—In driving the west levels in a seam of coal dipping to the south at the rate of 1 in 6, an upthrow fault of 15 yards is met with; what would you do to recover the coal? If it were tunnelled out what would be the length of the tunnel?

4. GUNPOWDER.

21.—What is gunpowder made of?
22.—How do you make a cartridge?
23.—Describe the material you would use in tamping.
24.—What would you do in case of a missed shot?

5. MACHINERY.

25.—What is the difference between a condensing and non condensing engine?
26.—What is the principle of the Cornish pumping engine?
27.—What quantity of water is lifted per minute by a bucket pump, the diameter of the working barrel being 14 in., the length of stroke 7 ft., and the number of strokes per minute 6½?
28.—The water in a boiler has become dangerously low; what would you do?
29.—Describe the method of applying a balance to pit ropes.

DECEMBER, 1873.—QUESTIONS.

1.—Name shortly the common sources of danger to be guarded against in ordinary sinking without pumps?
2.—Describe the method of putting in a length of bricking in a sinking pit.
3.—Why does the air in the upcast shaft, heated by a furnace, rise?
4.—What different gases given off in mines are you acquainted with, and what are their peculiarities?
5.—What would be the effect of putting a light into fire damp unmixed with air?
6.—Why when fire damp explodes inside a safety-lamp does not the flame pass through the gauze?
7.—What is an air crossing, and what is its use?
8.—How many cubic feet of air per minute are there passing along an airway 7 ft. high by 10 ft. wide, the velocity of the air current being 500 ft. per minute?
9.—Describe by a sketch the different methods of working coal with which you are acquainted, indicating the air currents.
10.—What precautions would you use in approaching workings expected to contain water or gas?
11.—Why should a place be visited as soon as possible after the firing of a shot in it?
12.—Where two mines, each having an inclination of 1 vertical for 8 horizontal, are 50 yards apart vertically, what is the shortest length of a level tunnel to connect the two?
13.—How much larger is an airway 8 ft. by 8 ft. than one 4 ft. by 4 ft.
14.—What is a vacuum, what pressure corresponds with it, and to what is this pressure due?
15.—What is a barometer, thermometer, anemometer, and water-gauge?
16.—How would a water-gauge be affected by contracting an airway at a given place.

JUNE, 1874.—QUESTIONS.

1.—Name the different gases given off in mines, and give their respective properties.
2.—Will fire-damp unmixed with air support combustion.
3.—What is the principle upon which a Davy lamp is constructed, and what constitutes its safety?
4.—Name the different methods of working coal. Describe them by sketches, and show how you would ventilate.
5.—What precaution is necessary where gas is given off and known to exist in a cavity above an airway?
6.—What precaution should be observed after firing shots in working places?
7.—Show, by sketch, the method of boring you would recommend in approaching workings known to contain water or gas.
8.—In a mine with an inclination of 1 in 6 dipping to south a fault of 8 yards up running north and south is met with in the east levels; in what direction should a level tunnel be driven to gain the coal, and what length of tunnel would it require?
9.—Describe the barometer, thermometer, anemometer, and water gauge, and their respective uses in mines.
10.—Give the method of walling a sinking pit, and state what precaution should be taken where gas is given off.
11.—What is the proportion at which air and fire-damp mixed is most explosive?
12.—Describe by a sketch a furnace, dumb drift, and air crossing.
13.—Give the contents in cubic feet of a space 10 yards long, 3 yards wide, and 2½ yards high.
If this space was full of water, how long would it take a pump to empty it, delivering at the rate of 20 gallons a minute, there being 6¼ gallons in a cubic foot?
14.—If the area of an air road be 50 square feet, what velocity must be attained in the air current to produce 24,000 cubic feet of air per minute?
15.—Describe, by sketch or otherwise, the different kinds of pumps used in pits.
16.—What is the first general rule in the Coal Mines Regulation Act, 1872?
17.—What is the general rule in regard to the fencing of places?
18.—What is the duty of the person in charge of any part of a mine in case of danger arising from gas, and what should be done before workmen can be readmitted according to the general rule?
19.—What does the general rule provide for as to gunpowder, viz.:—As to its storage; quantity in one place; charging of it; missed shots; and its use on finding gas in the working places?

DECEMBER, 1874.—QUESTIONS.

1.—What are the restrictions as to the employment underground of boys and male young persons in the Coal Mines Regulation Act, 1872.
2.—What notices are required to be given in case of accidents, and to whom should they be sent?
3.—What places in a mine are required to be ventilated, and to what extent?
4.—Which places should be fenced off?

4.—What is the general rule as to safety-lamps and lights in places where there is likely to be an accumulation of fire-damp.
5.—Where are man-holes or places of refuge required to be provided?
6.—Of what is atmospheric air, or the common air we breathe, composed, and in what proportions?
7.—What is carbonic acid or black damp?
8.—What is oxygen?
9.—What is nitrogen?
10.—What other name is fire-damp known?
11.—By what other names is fire-damp known?
12.—State generally what you know of the above-named gases, as to where found, and their effect upon life or combustion.
13.—What are the general laws relating to the friction of air in mines?
14.—What are the best methods by sketch any methods of getting coal with which you are acquainted, and indicate the air currents.
15.—Describe by sketch where the inclination of the mine is 1 in 7, a fault of 10 yards down is met with; what is the shortest length of level tunnel necessary to gain the coal?
16.—In an airway of 5 ft. wide by 4 ft. 6 in. high, the anemometer registers 550 as the velocity per minute; what is the quantity of air passing?
17.—What is a furnace, a dumb-drift, and an air crossing. Show by sketch where and how each is applied.
18.—What quantity of water in gallons will a tank contain, the dimensions being 6 ft. by 4 ft. 6 in., there being 6¼ gallons to the cubic foot?
19.—What is the use of a barometer about a mine?
20.—What is the water-gauge used in mines, and what is its use?
21.—What is an anemometer?

DECEMBER, 1875.—QUESTIONS.

ON THE COAL MINES REGULATION ACT, 1872.

1.—To what extent does the first general rule require noxious gases to be dilated?
2.—How does the Act provide for the frequent inspection of working places in a mine?
3.—What is the law with regard to working in any dangerous part of a mine, and also as to resuming work in such place?
4.—What provision must be complied with in approaching places likely to contain a dangerous accumulation of water?

ON ATKINSON'S TREATISE ON VENTILATION.

5.—What is the least proportion of fire-damp to common air that can be detected by the candle?
6.—What is the greatest proportion, as above, that will not explode?
7.—What is the most explosive proportion?
8.—Beyond what proportion would a light be extinguished?
9.—What properties and other names has black damp?
10.—An airway is 5 ft. square and 1000 yards long. State—(*a*) its perimeter; (*b*) its sectional area; (*c*) its rubbing surface; (*d*) the velocity of a current of 10,000 cubic feet per minute in the above airway.
11.—How would the water-gauge be affected if the power required to produce the last-mentioned current were so increased as to double the quantity of that current?
12.—How would the amount of the power required to maintain this doubled current be affected?

ON PRACTICAL MINING.

13.—Give a sketch of any one system of working with which you are acquainted, showing the air currents by arrows, and also showing the doors, stoppings, and cogsines.
14.—Show, by sketch, a method of airing by brattice a set of three levels in course of driving.

N.B.—Further questions on practical mining will be put to the candidates as they appear before the examiners.

DECEMBER, 1876.—QUESTIONS.

ON THE COAL MINES REGULATION ACT, 1872.

1.—In what words does the Act make the ventilation of mines compulsory?
2.—Describe the inspection of working places required by the Act?
3.—State all you know of the registers required to be kept in or about a mine?

ON ATKINSON'S TREATISE ON VENTILATION.

4.—To what extent could a ventilating current be charged with fire-damp without being explosive?
5.—Why is it more difficult to clear up brows than down-brows of fire-damp?
6.—Would the circumstances be altered in the case of black-damp, and how?
7.—Give the dimensions, perimeter, and area of an airway through which a current of 30,000 cubic feet of air per minute is passing at a velocity of 500 lineal feet per minute.
8.—Give the areas, dimensions, and perimeters of two airways that would divide the above current into two equal splits, the velocity of each still being 500 lineal feet per minute.
9.—Which arrangement would offer the least resistance, and why?
10.—If the water-gauge fixed on a door 4 ft. square shows 1 in. what is the total pressure upon the door?

ON PRACTICAL MINING.

11.—Give a sketch of any system of working a coal mine with which you are acquainted, showing the direction of the air currents by arrows, and also showing the doors, stoppings, and air crossings.
12.—State all you know of the different appliances and methods of ventilating mines and of draining mines of water.

N.B.—Further questions on the various subjects will be put to the candidates as they appear before the examiners. JOSEPH DICKINSON.
The Rt. Hon. R. A. Cross, M.P., Secretary of State, Whitehall.

TIN-PLATES.—The quantity of tin-plates exported to April 30, 1875, amounted to 48,058 tons; to April 30, 1876, 41,752 tons; and to April 30, 1877, to 48,257 tons; of the respective values of 1,389,658*l.*, 957,611*l.*, and 982,639*l.*

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
June 1	Tan y-Rwlch	50	£13 16 0	Panther Lead Company.
	—Great Darren	14	18 3 0	Nevill, Druce, and Co.
	—New Llangynog	20	13 1 6	Mining Co. of Ireland.
4	—Rhoswyddol	20	13 4 0	Nevill, Druce, and Co.
14	—Talargoch :—			
	Maesyrewddu	60	13 15 0	Adam Eyton.
	Coetia Llys	40	13 11 0	Walker, Parker, and Co.
	—North Hendre	40	12 16 6	ditto
	— ditto	40	12 16 6	Adam Eyton.
	— do (round ore)	20	14 11 0	Sheldon, Bush, and Co.
	—Gorsedd and Merllyn	60	14 10 0	Walker, Parker, and Co.
	—Prince Patrick	20	13 2 0	ditto
	—United Mines	20	12 10 0	ditto
	—Rhyd Alun	20	14 18 0	ditto
	—Tankerville	125	13 12 6	George Burr.
	—South Darren	20	18 2 6	Treffry's Estate.

BLENDE.

Date.	Mines	Tons.	Price per ton.	Purchasers.
May 20	—Caldbeck Fells	18 14	£ 1 14 0	Tindale Spelter Co.
June 13	—Talargoch	60	3 19 6	Bagillt Smelting Co.
	— ditto	50	3 17 6	Dillwyn and Co.
	— ditto	50	3 17 6	Vivian and Sons.
	— ditto	20	3 17 6	Swansea Vale Spelter Co.
14	—Cwmbyr	16	4 7 0	Dillwyn and Co.

BLACK TIN.

Date.	Mines.	Tons c. q. lb.	Price per ton.	Amount.	Purchasers.
May 20	—Pedn-an-drea*	35 15 3 25	—	£1528 5 2	—
June 7	— ditto	10 12 1 13	£42 5 0	448 12 6	—Carvedras.
13	—Wh. Grenville	14 7 0 17	43 5 0	710 3 9	—

* Sold on May 20 to the Cornish Arsenic Co. 15 tons of arsenic for £61 10s.

PERUVIAN TIN ORE SOLD IN LIVERPOOL.

Date.	Purchasers.	Tons.	Price.
June 6	Redruth Tin Smelting Company	10¾	£27 17 6
	ditto	8	32 7 6

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the NEW CONSOLS SILVER AND ARSENIC WORKS (LIMITED).—By an Order, made by His Honor the Vice-Warden of the Stannaries, in the said Matter, dated the 2nd day of June inst., on the Petition of Thomas Westlake, of Calstock, within the Stannaries of Cornwall, a shareholder, and claiming to be also a creditor of the said company, IT WAS ORDERED that the VOLUNTARY WINDING-UP of the said New Consols Silver and Arsenic Works (Limited) should be continued, subject to the supervision of the Court.

HODGE, HOCKIN, AND MARRACK, Truro
(Agents for Flux and Co., 3, East India Avenue, London, E.C.),
(Solicitors for the Voluntary Liquidators).

Dated Truro, the 8th day of June, 1877.

In the High Court of Justice—Chancery Division.

IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867, AND IN THE MATTER OF THE BISHWELL COLLIERIES (LIMITED).

THE CREDITORS OF THE ABOVE-NAMED COMPANY are REQUIRED, on or before the 14th day of July, 1877, to SEND THEIR NAMES AND ADDRESSES, and the PARTICULARS OF THEIR DEBTS OR CLAIMS, and the names and addresses of their solicitors (if any) to EDMUND ETLINGER, of No. 60, Queen Victoria-street, in the City of London, the Liquidator of the said company, and, if so required by notice in writing from the said Liquidator, are by their Solicitors, to COME IN and PROVE THEIR SAID DEBTS OR CLAIMS at the Chambers of the Vice-Chancellor Sir RICHARD MALINS, at No. 3, Stone Buildings, Lincoln's Inn, in the county of Middlesex, at such time as shall be specified in such notice, or, in default thereof, they WILL BE EXCLUDED FROM THE BENEFIT OF ANY DISTRIBUTION made before such debts are proved. Monday, the 33rd day of July, 1877, at Twelve o'clock at noon, at the said Chambers, is appointed for hearing and adjudicating upon the debts and claims.

ALFRED RAWLINSON, Chief Clerk.

WALTER WEBB, 23, Queen Victoria-street, London
(Solicitor for the Liquidator).

Dated this 8th day of June, 1877.

B. & S. MASSEY, OPENSHAW, MANCHESTER.

Prize Medals—Paris, 1867; Havre, 1868; Highland Society, 1870; Liverpool, 1871; Moscow, 1872; Vienna, 1873; Scientific Industry Society, 1875; Leeds, 1875; Paris, 1875; Manchester and Liverpool Society, 1876; U.S. Centennial, Philadelphia, 1876.

PATENTEES AND MAKERS OF DOUBLE AND SINGLE-ACTING

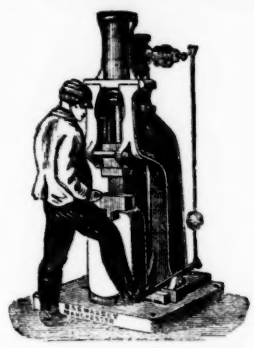
STEAM HAMMERS

Of all sizes, from ½ cwt. to 20 tons, with self-acting or hand motion, in either case giving a perfectly **DEAD BLOW**, while the former may be worked by hand when desired. **Large Hammers, with Improved Framing, in Cast or Wrought Iron. Small Hammers,** working up to 500 blows per minute, in some cases being **worked by the Foot** of the Smith, and not requiring any separate Driver.

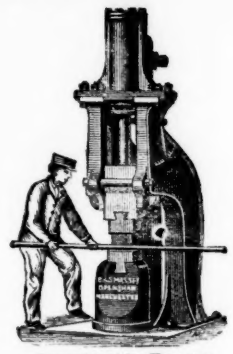
SPECIAL STEAM STAMPS, for Forging, Stamping, Punching, Bolt making, &c.

CIRCULAR SAWS for Hot Iron.

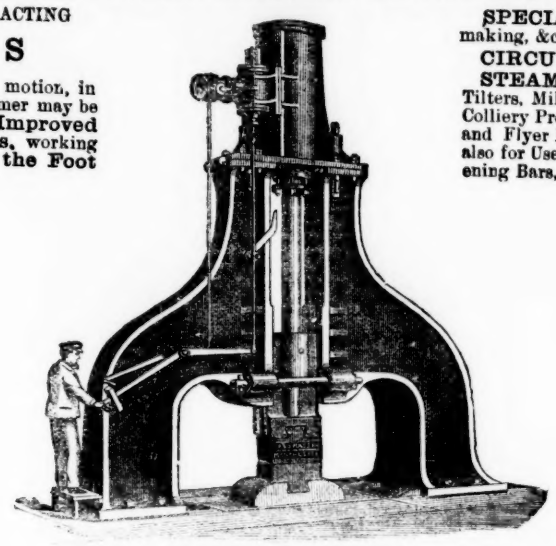
STEAM HAMMERS for Engineers, Machinists, Shipbuilders, Steel Tilters, Millwrights, Coppersmiths, Railway Carriage and Wagon Builders, Colliery Proprietors, Ship Smiths, Bolt Makers, Cutlers, File Makers, Spindle and Flyer Makers, Spade Makers, Locomotive and other Wheel Makers, &c. also for Use in Repairing Smithies of Mills and Works of all kinds; for straightening Bars, bending Cranks breaking Pig-iron, &c.



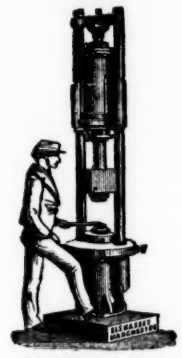
Small Hammer with Foot Motion.



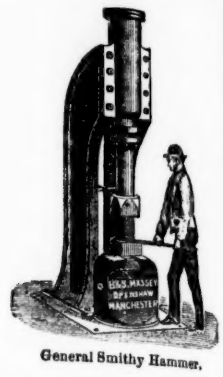
General Smithy Hammer.



Steam Hammer for Heavy Forging.



Special Steam Stamp.



General Smithy Hammer.

From 60 to 100 Steam Hammers and Steam Stamps may usually be seen in construction at the Works.

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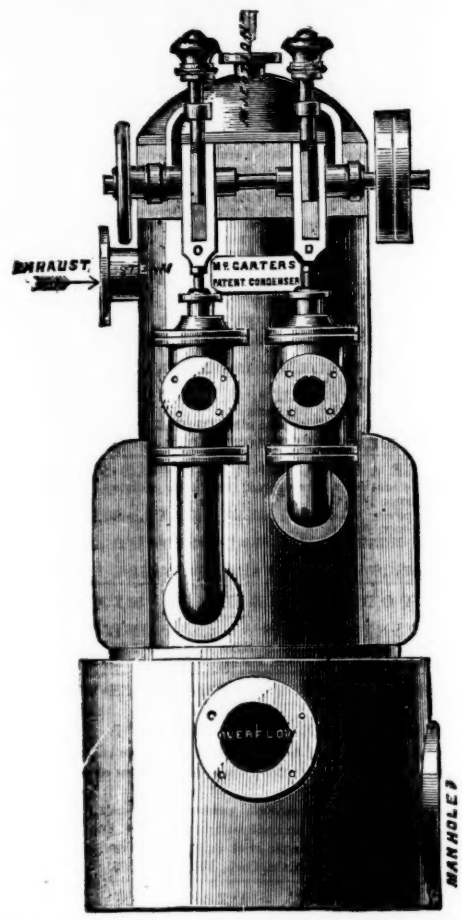
(LIMITED)

HUDDERSFIELD.



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Horizontal and Beam Engines for all purposes.

G. HUTCHINSON AND CO.,

FORTH BANKS OIL WORKS,

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Beg to draw the attention of COLLIERY OWNERS and ENGINEERS to the Oils prepared by their special process. They never clog nor corrode, but keep the bearings cool and clean, and will be found the best and most ECONOMICAL LUBRICANTS at present in the market, being very DURABLE, UNIFORM IN QUALITY, and CHEAP. Prices, from 2s.

SPECIALLY ADVANTAGEOUS RATES FOR LARGE CONSUMERS.

References to many eminent firms who have used them constantly for years, amongst whom may be mentioned Sir W. Armstrong and Co.; Elswick Engine and Ordnance Works, Newcastle; R. Stephenson and Co., Engineers, Newcastle; R. and W. Hawthorn, Engineers, Newcastle; Hawkes, Crawshay, and Sons, Engineers, Gateshead-on Tyne; Abbot and Co., Engineers, Gateshead-on-Tyne.

Samples, prices, &c., on application. AGENTS WANTED.

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The IRON AND COAL TRADES' REVIEW is extensively circulated amongst the Iron Producers, Manufacturers, and Consumers, Coalowners, &c., in all the iron and coal districts. It is, therefore, one of the leading organs for advertising every description of Iron Manufactures, Machinery, New Inventions, and all matters relating to the Iron, Coal, Hardware, Engineering, and Metal Trades in general.

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BOILERS; AIR COMPRESSORS, worked by Hydraulic or Steam-power; STEEL for MINING DRILLS; PUMPING, and all other MINING MACHINERY supplied.

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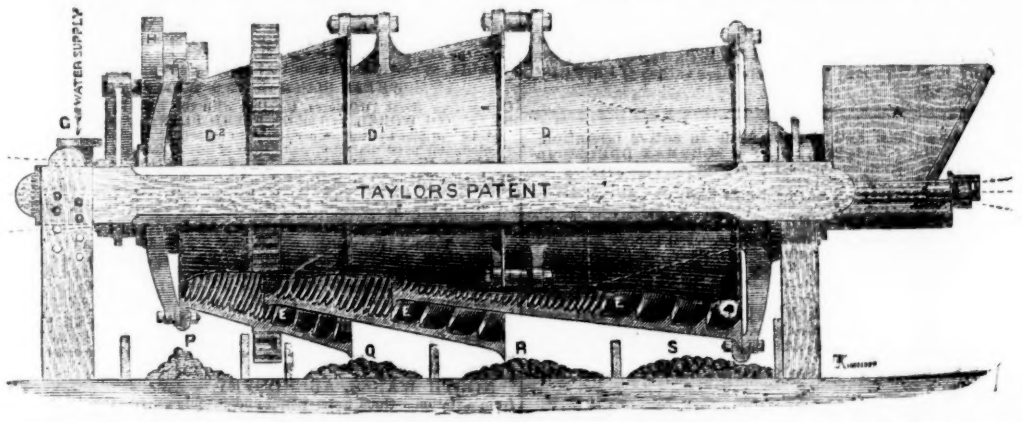
Mr. TAIT, Manager, East Hetton Quarry Company's Works, Coxhoe, Durham, writing on May 12, 1876, says—"I have pleasure in testifying to the value of your Rock Drills. The two you supplied us with about six months ago are giving us entire satisfaction. The cost of drilling by machine is less THAN ONE-FOURTH THAT OF DRILLING BY HAND. By the use of the Drills we have been able very greatly to increase the out-put of stone without increasing the number of men employed."

FIRST SILVER MEDAL AWARDED BY THE ROYAL CORNWALL POLYTECHNIC SOCIETY, 1876.



TAYLOR'S PATENT DRUM DRESSER,

FOR SEPARATING AND SIZING MINERAL AND OTHER SUBSTANCES.

By the aid of this invention any materials, which are of different specific gravity, can be concentrated and sorted mechanically; while in the case of ores the fine mineral is brought up with the larger particles instead of being washed into the waste—a most important feature.

This machine uses very little water in proportion to the quantity of material treated, and will be found a most useful and efficient dressing apparatus.

For further particulars, and to see machines at work, apply to the Patentee,

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HENRY WATSON,

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MANUFACTURERS OF EVERY DESCRIPTION OF

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FOR MARINE, STATIONARY, and LOCOMOTIVE ENGINES; COLLIERY PUMP WORKING BARRELS; FIRE ENGINES; SAFETY LAMPS; GUN METAL AND BRASS CASTINGS of any size; MALLEABLE BRONZE PRICKERS, and BLASTING APPLIANCES. Also,

Johnston's Patent Self-acting Alarm Whistles.

EXPLOSIONS FROM STEAM BOILERS have become so frequent, and are often attended with such serious results both to life and property, that any improvement tending to secure their safety cannot fail to be appreciated. From numerous examinations, made after explosions, by practical engineers, the great majority of accidents that occur are considered the result of a deficiency of water in the boilers. Experience has proved that it is good policy to furnish each boiler with this Self-acting Alarm, so constructed that, upon the water getting below a certain level, nothing can prevent the opening for the steam to act directly upon the instrument and cause the alarm.

The hollow cast iron float is made sufficiently heavy that, on falling with the water, it cannot fail in opening the orifice, as the apparatus is entirely free from all stuffing-boxes, glands, cocks, or any other contrivances which are so frequently found to operate against the proper action of alarms. The float is so constructed that it cannot become waterlogged. As long as there is a sufficiency of water in the boiler, the alarm valve is kept close against its seat by the float.

A loose pin at the top of the whistle enables anyone to test the alarm at a moment's notice.

Practical men consider this the best Alarm hitherto offered.

The Engraving shows the mode of fixing to boiler, also the water level. In ordering, the diameter of the boiler should be given, and also the diameter of the flue when there is one, also the distance from top of flue to top of boiler, or send sketch.

The use of these Alarms in large works, extending over a period of fifteen years, and numbering over 4000, is a guarantee in itself of their efficiency and safety.

NOBEL'S DYNAMITE

Is the MOST ECONOMICAL and POWERFUL EXPLOSIVE for every kind of MINING and QUARRYING OPERATIONS; for blasting in hard or soft, wet or dry ROCKS; for clearing land of TREE ROOTS and BOULDER STONES; for rending massive BLOCKS of METAL; for SUBAQUEOUS and TORPEDO purposes; and for recovering or clearing away of WRECKS, &c.

ITS SAFETY is evidenced by the total ABSENCE OF ACCIDENTS in transit and storage; it is insensible to heavy shocks its GIANT POWER being only fully developed when fired with a powerful percussion detonator, and hence its great safety.

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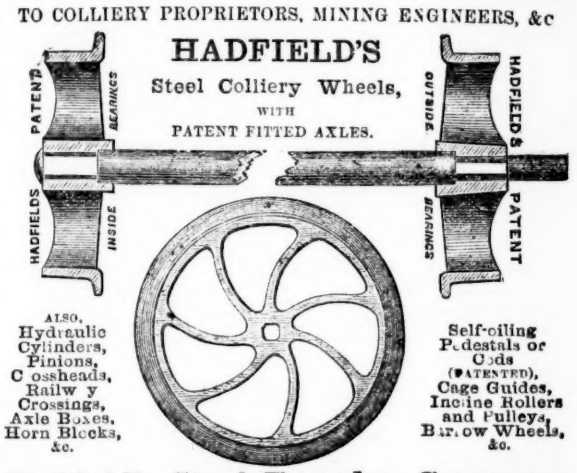

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
1500	Alderley Edge, c, Cheshire*	10 0 0	—		12 11 8	0 5 0	Jan. 1876
15000	Balmynheer, t, Wendron (4000 to is.)	1 0 0	—		0 2 0	0 2 0	Nov. 1875
30000	Bampfylde, c, i, mn., Devon*	1 0 0	1⅝	1⅜ 1⅝	0 2 0	0 2 0	June 1873
400	Botallack, t, c, St. Just§	119 5 0	25	20 25	619 15 0	5 0 0	Aug. 1872
6000	Brookwood, c, Buckfastleigh	1 16 0	1½	1¼ 1½	3 16 0	0 2 0	Nov. 1875
2000	Bryn Alyn,* l, Denbigh. (10l. sh.)	8 0 0	7½	7 7½	0 7 0	0 7 0	Jan. 1877
5000	Cargoll, s-l, Newlyn	6 6 0	4	3½ 4	4 16 3	0 12 6	Oct. 1872
6400	Cashwell, l, Cumberland*	2 10 0	2¼	2 2¼	1 9 6	0 2 0	Aug. 1876
1000	Carn Brea, c, t, Illogan§	36 7 6	36	34 36	308 0 0	1 0 0	Feb. 1874
2450	Cook's Kitchen, t, Illogan†§	23 9 9	3	1¾ 2¼	11 17 0	0 7 6	Jan. 1872
10240	Devon Gt. Consols, c, Tavistock†*	1 0 0	4¾	4 4½	116 10 0	0 12 0	May 1872
4296	Dolcoath, c, t, Camborne	10 14 10	34	30 32	111 6 3	0 5 0	April 1877
5000	East Black Craig,* l., Scotland	5 0 0	5	4¾ 5	0 10 0	0 10 0	Feb. 1877
6144	East Caradon, c, St. Cleer†	2 14 6	1	¾ 1	14 19 0	0 2 0	Oct. 1875
300	East Darren, l, Cardiganshire	32 0 0	—		235 10 0	1 0 0	Aug. 1876
6400	East Pool, t, c, Illogan	0 9 9	9½	9 9½	15 2 3	0 2 0	June 1877
2800	Foxdale, l, Isle of Man*†	25 0 0	—		82 5 0	0 10 0	Feb. 1876
40000	Glasgow Cara., c* [30,000 £1 p., 10,000 15s. p.]		1¼	1 1¼	0 12 10	0 0 6	Mar. 1877
15000	Great Dyliffe,* l, Montgomeryshire	4 0 0	4	3 4	0 2 6	0 2 6	Apr. 1876
15000	Great Laxey, l, Isle of Man*	4 0 0	21	20 21	21 13 0	0 10 0	Apr. 1877
615	Great Retallack, l, bl, Perranzabuloe	5 18 6	—		0 1 6	0 1 6	May 1876
20000	Great West Van, l, Cardigan,* pref.	2 0 0	2⅛	2 2⅛	0 2 0	0 1 0	Aug. 1874
6400	Green Hurth, l, Durham*	0 6 0	2½	2½ 2¾	1 12 0	0 4 0	Oct. 1874
20000	Grogwinion, l, Cardigan*	2 0 0	4½	3½ 4½	0 12 0	0 4 0	Feb. 1877
9880	Gunnislake (Clitters'), t, c	5 5 0	2¾	2½ 2¾	0 13 9	0 1 0	Oct. 1876
1024	Herodsfoot, l, near Liskeard†	8 10 0	4	3 4	62 5 0	0 15 0	Oct. 1872
18000	Hingston Down, c, Calstock*†	0 4 0	½	¼ ½	0 1 0	0 1 0	Nov. 1875
60000	Holmbush, a, c, s-l, Callington*	1 0 0	1¾	1½ 1¾	0 1 6	0 0 6	April 187
25000	Killaloe, s, Tipperary	1 0 0	—		0 3 11½	0 0 8	Mar. 1873
20000	Leadhills,* l, Lanarkshire	6 0 0	6¼	6 6½	0 6 0	0 6 0	April 1877
400	Lisburne, l, Cardiganshire	18 15 0	80	75 80	581 10 0	1 0 0	May 1877
14000	Llanidloes,* l, Montgomery	3 0 0	3	2 3	0 9 0	0 4 6	Nov. 1876
6120	Lovell, t, Wendron	0 16 0	—		0 17 6	0 1 6	Jan. 1874
9000	Marke Valley, c, Linkinhorne	5 0 6	1⅛	1 1¼	7 15 0	0 2 0	Jan. 1876
9000	Minera Mining Co., l, Wrexham*	5 0 0	18		67 0 2	0 4 0	May 1877
3000	Mining Co. of Ireland, cl, c, l*	7 0 0	—		23 11 6	0 3 6	Jan. 1876
512	North Busy, c, Chacewater	3 9 6	3½	3 3½	0 10 0	0 10 0	Dec. 1875
1289	North Hendre, l, Wales	2 10 0	—		1 7 6	0 2 6	Dec. 1876
2000	North Levant, t, c, St. Just§	12 2 0	—		4 13 0	0 12 0	Sept. 1873
2,855	Old Treburgett,* s-l, ordinary shares	1 0 0	—		0 0 9	0 0 9	Feb. 1874
9255	Old Treburgett,* s-l (10 per ct. pref.)	0 10 0	⅜	⅛ ⅜	0 1 4½	0 0 6	July 1874
5000	Penhalls, t, St. Agnes	3 0 0	2¾	2½ 2¾	3 13 6	0 2 0	July 1875
6000	Pennant, l, bar, North Wales*	5 0 0	6	5 5½	0 5 0	0 5 0	Mar. 1877
40,000	Penstruthal,* t, c, Gwennap	2 0 0	½	⅜ ½	0 2 8	0 0 8	Nov. 1875
12000	Phœnix, & W. Phœnix, t, c, Link.§	3 4 9	4½	4 4½	2 9 6	0 4 0	Nov. 1872
18000	Prince Patrick,* s-l, Holywell	1 0 0	2¼	1¾ 2¼	0 14 0	0 1 3	Jan. 1876
5.1	Providence, t, Lelant†§	21 6 7	—		104 12 8	0 10 0	Sept. 187
12000	Roman Gravels, l, Salop*	7 10 0	10¼	10 10½	7 10 0	0 5 6	May 1877
512	South Caradon, c, St. Cleer	1 5 0	110	105 110	736 10 0	2 10 0	April 1877
6123	South Condurrow, t, c, Camborne‡	6 5 6	8½	7½ 8¼	2 12 0	0 6 0	May 1877
12000	St. Harmon,* l, Montgom	3 0 0	3½	3 3½	0 3 0	0 3 0	Jan. 1877
10000	So. Fr. Patrick,* s-l (5000 sh. issued)	1 0 0	—		0 7 0	0 1 0	Oct. 1875
12000	Tankerville, l, Salop*	6 0 0	7¼	7¼ 7¾	4 17 0	0 5 0	Dec. 1876
6000	Tincroft, c, t, Pool, Illogan†	9 0 0	17	15 17	50 8 6	0 5 0	May 1877
15000	Van, l, Llanidloes*	4 5 0	35½	33½ 35½	20 15 6	0 16 0	April 1877
3000	W. Chiverton, l, Perranzabuloe†	12 10 0	16	15 17	55 0 0	0 10 0	Jan. 1877
1783	West Poldice, St. Day	10 0 0	13	11 13	1 19 0	0 4 0	July 1876
512	West Tolgus, c, Redruth	95 10 0	62½	60 62½	19 15 0	1 0 0	April 1877
2045	West Wheal Frances, t, Illogan	28 1 3	3	2½ 3	3 12 6	0 5 0	Oct. 1872
12000	West Wye Valley,* l, Montgomery	3 0 0	4	3½ 4½	0 6 0	0 3 0	Nov. 1876
512	Wheal Basset, c, Illogan†§	19 2 6	13	11 13	63 10 0	1 10 0	Aug. 1872
1024	Wheal Eliza Consols t, St. Austell	20 0 0	—		13 0 0	1 0 0	May 1877
2048	Wheal Jane, t, Kea	2 13 10	1½	1¼ 1½	8 5 0	0 5 0	July 187
4295	Wheal Kitty, t, St. Agnes	5 4 6	2½	2 2½	11 19 6	0 2 6	Dec. 1877
25000	Wh. Newton, a, c, s, t, Harrowbarrow*	1 0 0	4	3 4	0 0 6	0 0 6	April 18
80	Wheal Owles, t, St. Just§	86 5 0	140	130 140	522 10 0	4 0 0	Aug. 1875
6000	Wheal Prussia, t, Redruth	2 0 0	4⅞	5 5½	0 3 0	0 2 0	Dec. 1872
25000	Wicklow c, sul, l, Wicklow	2 10 0	2	1⅞ 2	52 9 0	0 2 6	Mar. 1874
10000	Wye Valley, l, Montgomery*	3 0 0	4	3½ 4½	0 10 6	0 4 6	Oct. 1876

FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
35500	Alamillos, l, Spain*†	2 0 0	2	1½ 2	1 17 3	0 1 0	Mar. 1877
30000	Almada and Tirito Consol., s*†	1 0 0	⅜	⅛ ⅜	0 6 3	0 1 0	May 1876
20000	Australian, c, South Australia†	7 7 6	2¼	1¾ 2¼	0 18 0	0 2 6	Aug. 1876
10000	Battle Mountain,* c, (6240 part pd.)	5 0 0	—		0 10 0	0 10 0	Nov. 1875
15000	Bird-eye Creek, g, California*	4 0 0	⅝	⅜ ⅝	0 14 0	0 2 6	June 1874
12320	Burra Burra,* c, So. Australia	5 0 0	—		70 0 0	0 10 0	Oct. 1872
20000	Cape Copper Mining,*† So. Africa	7 0 0	36	37 39	28 15 0	1 0 0	June 1877
40000	Cedar Creek, g, California*	5 0 0	⅝	⅜ ⅝	0 5 0	0 2 6	June 1873
15000	Chicago, s, Utah*	10 0 0	3½	3 3½	2 8 0	0 4 0	Nov. 1876
65000	Colorado United, s-l, Colorado*†	5 0 0	1¾	1¼ 1¾	0 13 6	0 4 0	Jan. 1875
10000	Copiapo, c, Chili (£20 shares)	16 15 0	—		7 11 5	0 3 0	May 1877
100000	Don Pedro North del Rey*†	0 16 0	½	¼ ½	2 5 9	0 2 0	Mar. 1872
23500	Eberhardt and Aurora, s, Nevada*†	10 0 0	7½	7 7½	1 8 0	0 3 0	Dec. 1876
70000	English and Australian, c† S. Aust.	2 10 0	1½	1¼ 1½	2 15 9	0 1 0	Mar. 1877
50000	Flagstaff, s, Utah*	10 0 0	2¾	2 2½	4 2 0	0 5 0	July 1873
25000	Fortuna, l, Spain*†	2 0 0	6¼	5¾ 6¼	6 9 2	0 6 8	Mar. 1877
55000	Frontino & Bolivia, g, New Gran.*†	2 0 0	2¾	2¾ 3¼	0 1 0	0 1 0	June 1876
30000	Gold Run, hyd.	1 0 0	—		0 2 4	0 0 4	Oct. 1872
68000	Kapunda Mining Co. Australia†	1 3 0	—		0 2 4	0 0 6	June 1873
20000	Last Chance, s,* Utah	5 0 0	¾	¼ ¾	0 14 0	0 2 0	July 1873
15000	Linares, l, Spain*†	3 0 0	6¼	6 6½	16 17 2	0 9 0	Mar. 1877
65000	London and California, g*†	2 0 0	¾	½ ¾	0 1 0	0 1 0	July 1875
7837	Lusitanian, Portugal*† (£5 shares)	3 10 0	—		1 11 6	0 1 6	Mar. 1873
5000	Mammoth Copperopolis of Utah, c, s	10 0 0	—		0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, s, Utah*	10 0 0	—		0 4 0	0 4 0	Jan. 1873
18000	Prussian Mining & Ironworks, cl, i.	30 0 0	—		6 0 0	3 0 0	July 1873
10000	Pontgibaud, s-l, France†	20 0 0	27	25 27	23 1 1	1 11 1	Nov. 1876
100000	Port Phillip, g, Clunes*†	1 0 0	⅝	⅜ ⅝	1 8 0	0 1 0	Jan. 1877
54000	Richmond Consols, s, Nevada*†	5 0 0	6¾	6¾ 7¼	3 9 0	0 7 6	Oct. 1876
40000	Santa Barbara,* g, Brazil	0 10 0	2⅛	1¾ 2¼	0 3 9	0 1 3	May 1877
120000	Scottish Australian Mining Co.*†	1 0 0	1⅞	1⅝ 1⅞	17½ per cent.		Nov. 1876
80000	Scottish Austral. Mining Co., New	0 5 0	⅝	⅜ ⅝	17½ per cent.		Nov. 1876
112500	Sierra Buttes, g, California*†	2 0 0	1¾	1¼ 1¾	1 16 0	0 2 0	Oct. 1876
60000	South Aurora, s, Nevada*	5 0 0	¼	⅛	0 14 2	0 2 0	Nov. 1873
£253000	St. John del Rey*† (£5 stock and multiples dealt in)			300 320	½ year ... 20 p. ct. for		Dec. 1876
20000	Tolima, g, s* So America	5 0 0	—		0 11 6	0 6 6	May 1874
25000	Victoria (London)*, g, Australia	1 0 0	—		0 11 10½	0 0 10	Aug. 1876
15000	Western Andes, s,* New Granada	5 0 0	—		12 per cent. per an		July 1876
21300	W. Prussian (5500 pref. sh. 10l. paid)	10 0 0	11¼	10¾ 11¼	1 4 0	0 8 0	April 1877

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
20000	Anglo-Australian, g, Victoria*	2 10 0	—		Fully pd.
5000	Anguilla Phosphate, West Indies (4000 issued)	10 0 0	—		Fully pd.
12000	Argentine, g, Argentine Republic	5 0 0	4¼	4¼ 4¾	Fully pd.
10000	Australian Central, g* (also 6000 deferred shares)	1 0 0	—		Fully pd.
3000	Bellavista, s, Peru* (£10 shares)	10 0 0	—		Fully pd.
30000	Blue Tent, hyd., California	5 0 0	3¼	2¾ 3	Fully pd.
35000	Cesena Sulphur Company, Romanga, Italy*	10 0 0	—		Fully pd.
50152	Chontales, g, s, Nicaragua*†	2 0 0	⅜	¼ ⅜	Fully pd.
16000	Condes of Chili, s-l	5 0 0	4	3½ 4	Fully pd.
35000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	—		Dec. 1871
100000	Exchequer, g, s, California*†	1 0 0	¼	⅛ ¼	Fully pd.
40000	Holcombe Valley, g,* California	1 0 0	—		July 1873
8000	Hornachos,* s-l, Spain	10 0 0	15	14½ 15	Fully pd.
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	—		Fully pd.
100000	I. X. L., g, s, California*	1 0 0	⅜	¼ ⅜	Fully pd.
50000	Javali, g, Nicaragua*	2 0 0	½	⅜	Fully pd.
3500	La Manche, l, Newfoundland	10 0 0	—		Fully pd.
12000	Lanestosa,* l, z, Viscaya, Spain (£2 shares)	1 15 0	—		Mar. 1876
75000	Malabar, g, Colombia* (67165 issued)	1 0 0	⅞	⅝ ⅞	Fully pd.
40000	Malpaso, g, Colombia* (7400 pref. shares, fully paid)	1 0 0	¾	⅝ ¾	Fully pd.
12000	Menzenberg, c, Honnef, Germany*	5 5 0	—		Fully pd.
4568	New Bensberg, i, l, Germany	5 0 0	—		Nov. 1876
60000	New Quebrada, c, Venezuela*	5 0 0	2¼	1¾ 2¼	Fully pd.
20000	New Zealand Kapanga, g, Coromandel*	5 0 0	1¾	2¼ 2¾	Fully pd.
3000	Oregon,* g, Oregon, U.S. (preference shares)	4 0 0	—		Sept. 1875
50000	Panulcillo, c, Chili*† (£80000 debentures)	4 0 0	1½	1 1¼	Fully pd.
30000	Pestarena United, g, Italy*†	3 0 0	⅜	⅛ ⅜	Fully pd.
50000	Providencia and New Rosario, s, Mexico*	1 0 0	—		Fully pd.
50000	Rica, g, Colombia* (40000 issued)	1 0 0	¼	⅛ ¼	Fully pd.
£2,161,000	Rio Tinto,* c, Huelva, Spain	Stock	59	56 58	Fully pd.
100000	Rossa Grande, g, Brazil*† (£1 shares)	0 19 0	⅛	⅛	July 1872
30000	Russia Copper, Orenburg and Ufa*†	10 0 0	1⅜	1¼ 2¾	Fully pd.
25000	San Pedro, c, Chili*	2 0 0	¾	½ ¾	Fully pd.
10000	Silver Plume, s, Colorado*	1 0 0	—		Fully pd.
80000	Tecoma, s, Utah*	10 0 0	½	¼ ½	Fully pd.
20000	Thornhill Reef, g, Australia*	1 0 0	—		Fully pd.
43174	United Mexican, s, Mexico*†‡	28 15 3	2¼	2 2¼	May 1875
14000	Utah, g, s-l, Utah*	5 0 0	—		Fully pd.
75000	Yorke Peninsula, c, South Australia	1 0 0	⅜	⅛ ⅜	Fully pd.
40000	Yorke Peninsula, c, South Australia Preference	1 0 0	1	¾ 1	Fully pd.

§ Have made calls since last dividend was paid.

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

	Closing Prices.	
Argentine, 1868, 6 per cent.	66	68
Bolivia, 6 per cent.	21½	22½
Brazilian, 1865, 5 per cent.	93	95
Chilian, 1866, 7 per cent.	101	104
City of Providence, 5 p.c. coupon bonds	100	101
Egyptian, 1868, 7 per cent.	52	54
Do., unified debt, scrip	40¼	40¾
Do., 7 per cent., V.M.L.	65	70
Do., 9 per cent. guar.	73	77
Do., 7 per cent., K.M.L.	41	42
Foreign and Col. Gov. Trust, 6 p. cent.	60	65
Do., 5 per cent., 2d issue	45	50
Do., 6 per cent., 3d issue	45	50
Do., 1872, 4th issue	45	50
Do., 1873, 5th issue	41	49
Peruvian, 1870, 6 per cent.	14½	15½
Do. 1872, 5 per cent.	12¼	12¾
Russian, 5½ per cent. L. Mort.	67	72
Spanish, Quicksilver Mort. 5 p. cent.	92	94
United States Mort., 6 per cent.	91	93

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. pr.
40000	Aberdaunant, l, Llanidloes*	1 0 0	1⅜	1⅛ 1⅜
10000	Aberystwith,* s-l, Cardigan	5 0 0	—	
7800	Alvig. & Burng.,*t, St. Aust.	3 0 0	3⅛	3⅛ 3¼
18000	Ambrose Lake, t, c, Liskeard	1 18 6	—	
12000	Assneton, l, Carnarvonshire*	5 0 0	1¾	1¼ 1½
50000	Ballycummisk,* c, Schull	2 0 0	—	
12000	Bedford United, c, Tavistock	1 19 6	½	⅜ ½
28000	Belstone,* c, Devon (27,000 fy. pd.)	1 0 0	2¾	2¼ 2¾
10000	Blaen United,* s-l, Cardigan	1 0 0	—	
3937	Bine Hills, t, c, St. Agnes	3 7 6	—	
30000	Bodidris,* l, bl, Denbighshire	1 0 0	1¼	1 1¼
1000	Bollihope Vale,* s-l, Durham	5 0 0	6	5½ 6
2000	Bowden Hill,* mn	1 0 0	—	
6000	Bradwell Moss Rake	1 0 0	1	⅞ 1
20000	Caldbeck Fells, l, Cumberland*	2 0 0	—	
20000	Cambrian,* s-l, c, Cardiganshire	2 0 0	2¼	2 2¼
15000	Cathedral, t, c, Gwennap*	1 10 0	1½	1 1½
20000	Central Foxdale, l, I. of Man* (2l. sh.)	1 5 0	—	
10000	Central Van,* l, bl, Llanidloes	5 0 0	—	
128	Clementina, l, Llanrwst	20 0 0	—	
7500	Combellack,* t, Wendron	2 0 0	3	2½ 3
6000	Combmartin, s-l, North Devon	0 6 0	⅝	½ ⅝
24000	Court Grange, s-l. (6000 sh. 0s. pd.)	1 0 0	1⅜	1 1⅛
20000	Cwm Dwyfor, c, s-l, Carnarvonsh	0 15 0	—	
6000	Cwm Lanarch,* s-l, Carnarvon	5 0 0	5½	5 5½
3000	Cwmystwith (New) [5l. shares]	4 0 0	—	
512	D'Eresby Mountain, l, bl, Llanrwst	20 0 0	15	
10000	Denbighshire Consolidated, l*	3 0 0	1¾	1¼ 1¾
12000	Derwent,* l, Durham	4 0 0	3¼	2¾ 3¼
656	Ding Dong, t, Gulval	53 9 6	—	
10000	Dubby Syke, l, Durham*	0 12 6	½	¼ ⅜
4000	East Chiverton, l, Perranzabuloe	6 14 6	2½	2 2¼
3000	East Craven Moor, l, Pateley Bridge	10 0 0	10½	10 10½
6000	East Goginan, l, Cardigan	2 0 0	—	
8000	East Van, l, Llanidloes*	5 0 0	5	5 5½
20000	Elgar,* s-l, Cardiganshire	1 0 0	1¼	1 1¼
5000	Frank Mills, l, Christow	5 6 0	⅝	½ ⅝
8000	Fronvellan, l, Mont.* (4000 sh. fy pd.)	1 0 0	—	
3950	Gawton, c, Tavistock	4 3 6	⅜	⅛ ⅜
12000	Glan Clwyd,* l, Gwyddelwern	1 0 0	—	
14000	Glenroy,* s-l, Isle of Man	4 0 0	1⅛	⅞ 1⅛
10000	Glyn,* l, Llanidloes	2 0 0	1⅜	1⅛ 1⅜
12000	Goginan, & Level Newydd, Card., l	2 10 0	—	
100000	Gold, g, Merionethshire	1 0 0	—	
20000	Goreu,* s-l, Carmarthen	1 0 0	1¼	1⅛ 1¼
7500	Gorsedd and Merllyn Cons., l, Flint	2 10 0	6	5 5½
20000	Gt. E. Foxdale, l, I. of Man (1l. sh)	0 18 0	—	
9500	Great Pant-y-Pydew, l, Holywell	2 0 0	—	
6000	Gt. Wheal Eleanor, t, North Bovey	1 0 0	3	2 3
18000	Grosvenor, l, Holywell (£1 sh.)	0 15 0	—	
10000	Harehope Gill,* l, Durham (£1 sh.)	0 5 0	—	
6400	Harwood,* l, Durham	0 15 0	¾	⅞ 1
5000	Hush Eisteddfod Minera,* l	2 0 0	—	
200	Islay,* l, Scotland	28 0 0	—	
8000	Killifreth, t, Chacewater	2 1 0	½	⅜ ½
25000	Kingston Con., s-l, Stoke Climsland	1 0 0	—	
12000	Ladywell,* l, Salop	2 10 0	1	⅞ 1
12000	Ditto, 10 per cent. pref., 1l. each	0 10 0	⅝	½ ⅝
2500	Levant, c, t, St. Just	9 6 6	—	
25000	Llanrhaiadr, l, Montgomery*	2 0 0	—	
30000	Llanrwst,* l, Carnarvon	2 0 0	4¼	4 4¼
15000	Llwyn Teify,* s-l, Cardigan	1 0 0	—	
8000	Medlyn Moor, t, Wendron	1 17 4	2	2
10000	Mellanear Copper, Hayle*	1 0 0	—	
10000	Melyn[?]	8 0 0	—	
11000	Monydd Gorddu, l, Cardigan* (Red.)	5 0 0	4	3 4
12000	Mount's Bay, c, Marazion	1 0 0	—	
5000	Nant-y-Ronen, s-l, Cardigan*	1 0 0	—	
15000	Nascent Copper*	1 0 0	—	
6000	New Bronfloyd,* l, Cardigan (5l. sh.)	3 0 0	—	
20000	New Consols, s, a (in liquidation)	3 0 0	—	
8000	New Dolcoath, t, c, Camborne*	3 0 0	1¼	1⅛ 1¼
20000	New East Foxdale, s-l, Isle of Man	0 15 0	—	
16000	New Fowey Consols, t, St. Blazey*	3 0 0	2	1½ 2
1492	New Hendra, t, Breage	3 9 0	1⅜	1¼ 1⅜
3200	New South Merllyn, l, Flint*	2 10 0	2	1 2
5000	New Wheal Emma, c, Buckfastleigh	2 0 0	—	
4000	North Cornwall, l, Cornwall	5 0 0	5¼	5 5¼
17000	North Laxey,* Isle of Man	2 0 0	1	⅞ 1⅛
20000	North Prince Patrick,* l, Holywell	1 0 0	1¼	1 1¼
5936	North Treskerby, c, St. Agnes	3 17 10	—	
2000	North Wheal Towan, t, c, Illogan	1 19 6	—	
2500	Old Tincroft, c, t, Lelant*	4 0 0	4	3 4
6400	Oola Hills,* s-l, Limerick	5 0 0	—	
12000	Pandora,* l, Carnarvon	2 0 0	—	
16923	Parys Mountain,* c, Anglesea	3 0 0	½	⅜ ¼
4000	Pateley Bridge, l, Yorkshire	5 0 0	2¼	2 2½
6000	Pedn-an-drea Con., t (new company)	nil	7⅛	7 7⅛
12000	Pennerley, l, Shropshire*	2 0 0	½	⅛ ⅜
30000	Perkins Beach, l, Shropshire	1 0 0	1¾	1 1¼
12000	Plynlimmon, l, Llanidloes*	2 0 0	½	⅜ ½
648	Polrose, t, Breage	21 0 0	—	
10000	Port Nigel,* s-l, Carnarvonshire	2 0 0	2½	2 2½
2000	Prideaux Wood, t, Llanivery	5 0 0	—	
12800	Prince of Wales, c, Calstock‡	2 2 0	3s.	2s. 3s.
10000	Red Rock,* l, Cardigan	2 0 0	2½	2¼ 2¾
6000	Relistian Consols, c, Gwinear	0 10 0	⅝	½ ⅝
15000	Rookhope, l, Durham*	1 10 0	1½	1 1½
3000	Russell, s-l, Swymbridge	0 6 0	—	
5000	Silvercross,* c, t, Marazion	1 0 0	¾	½ ¾
4200	Snowbrook, s-l, Montgomery	5 0 0	5¼	5⅛ 5¼
6000	So. Cwmystwith, l, Cardiganshire	2 0 0	4¼	3½ 4
3000	South Darren, l, Cardigan*	1 10 0	—	
512	South Dolcoath, c, t, Redruth	12 5 0	1¼	1 1¼
18000	South Roman Gravels, l*	1 10 0	⅞	⅝ ⅞
6000	South Roskear, t, c, Camborne	6 10 0	5	4 5
6000	South Tolcarne, t, c, Camborne	1 14 0	¾	½ ¾
937	South Wheal Crofty, c, Illogan	37 0 10	11	10 11
4500	South Wh. Frances, c, Illogan†	7 4 4	¾	⅝ ¾
432	Spearn Moor, t, Penzance‡	46 17 9	—	
6000	St. Lawrence, Amal., l, Flintshire*	2 0 0	—	
10000	St. Patrick, l, Halkin, Holywell*	1 0 0	1⅜	1⅛ 1⅜
6000	Success, &c., l, Derb. (12,000l. called)	1 0 0	—	
14000	Sunnyside,* l, Durham	2 0 0	2½	2 2½
30000	Talybont, s-l, Cardiganshire	1 0 0	1¼	1 1¼
400	Teesdale,* l, Durham	1 0 0	1	¾ 1
4000	Teign Valley, l, bar., Bridford	1 0 0	—	
10000	Temple, l, Cardigan*	1 0 0	1¼	2 2¼
10000	Tolgus Consols,* c, Redruth	5 0 0	5¼	5 5¼
12000	Trebeigh Consols, s-l, St. Ive	0 9 0	⅜	⅜
5000	Treleigh Wood, t, Redruth	5 16 0	—	
547	Treiyon Consols	15 0 0	⅝	½ ⅝
12000	Trethellan, s-l, Crantock*	2 0 0	—	
2563	Trumpet Consols, t, Helston§	10 0 0	—	
640	Truro*, l, Nerquis, Flintshire	10 0 0	10	10
10000	Tyn-y-Fron,* l, Cardigan	1 0 0	1½	1 1½
6000	Unity Wood, t, c, Kenwyn	4 11 6	⅞	¾ ⅞
20000	Van Consols, l, Llanidloes*	2 10 0	2	1¾ 2
12000	West Assheton, l, Carnarvon	1 0 0	1	¾ 1
6000	West Basset, c, Illogan†‡	5 6 8	3	2 2½
10000	West Bryn Celyn,* l, Flintshire	1 0 0	—	
5500	West Combmartin, s-l, North Devon	1 0 0	1¼	⅞ 1¼
7000	Ditto	0 2 6	¼	⅛ ¼
3000	W. Craven Moor, l, Pateley Bridge*	10 0 0	13	11 13
5000	West Godolphin, t, c, Breage	2 6 0	3	2¾ 2¼
12000	West Goginan,* Cardiganshire	2 0 0	¾	½ 1
15000	West Great Work, t, Breage*	2 0 0	2¼	2⅛ 2¼
10000	West Llangynog, s-l, Montgomery	2 0 0	—	
12000	W. Maria & Fortescue, t, c, Lamer	4 14 0	¾	¼ ¾
3000	West Mary Ann, l, Menheniot	0 3 6	¾	⅛ ¾
50000	West Milwr, s-l, Flint	1 0 0	—	
20000	West Pateley Bridge, l, Yorkshire	1 0 0	1¼	1 1¼
1000	West Roskear,* s-l, bl, c, Camborne	3 0 0	15	1? 15
12000	West Tankerville,* l, Salop	3 0 0	1½	⅞ 1½
3000	Ditto, 15 per cent pref.	3 0 0	2	1¾ 2
15000	West Treasvean,* c, t, Gwennap	1 0 0	1⅜	1⅛ 1⅜
3000	West Wheal Peevor, t, Redruth	0 10 0	2¾	2½ 2¾
600	West Wheal Seton, c, Camborne†	47 0 0	32½	30 32½
6000	Wheal Agar, c, Illogan	11 10 0	3¾	3¼ 3¾
6000	Wheal Argus, t, Sancreed	0 10 0	—	
4000	Wheal Coates, t, St. Agnes	2 0 0	2	1½ 2
2635	Wheal Comfort, c, Gwennap	1 5 0	5	4½ 5
6000	Wheal Crebor, c, Tavistock	4 1 0	2	1½ 2
5179	Wheal Grenville, c, Camborne*	2 18 6	1¾	1¼ 1¾
1000	Wh. Mary Hutchings,* t, Plympton	1 14 0	—	
4000	Wheal Peevor, t, Redruth	6 7 6	3	2½ 3
12000	Wheal Russell, c, Tavistock	2 1 6	⅜	¼ ⅜
6000	Wheal Uny, t, c, Redruth	13 11 6	1¾	1⅜ 1¾
480	White Cliff,* l, Llanrwst	4 0 0	4	4

b, blende; cl, coal; c, copper; g, gold; l, lead; s, silver; sl, slate; s-l, silver-lead; t, tin; z, zinc.

* Limited Liability Companies; † quoted on the Stock Exchange; ‡ have paid dividends.

IRON AND COAL COMPANIES.

Shares.	Company.	Paid.	Prices.
£100	Abbot, John, and Co. [L.]	£75 0 0	3¼ 3
15	Albion Steel and Wire Co. [L.]	14 0 0	15 14¼
5	Alltami Colliery Co. [L.]	5 0 0	¼
100	Ashbury Co. [L.]	90 0 0	55
10	Bagnall, John, and Sons [L.]	10 0 0	7 45
10	Benhar Coal Co. [L.]	10 0 0	1 6¼
50	Bilbao Iron Ore Co. [L.]	50 0 0	20 ¼
10	Bilson & Crump Meadow Coll. Co. [L.]	10 0 0	22
4	Blaen Cwmbach Coal Co. [L.]	4 0 0	—
50	Blaenavon Iron and Steel Co. [L.]	50 0 0	—
100	Bolckow, Vaughan, and Co. [L.] A	45 0 0	—
50	Bowling Iron Co. [L.]	50 0 0	3¼ 4¼
50	Britannia Ironworks [L.]	26 0 0	—
50	Brown, Bailey, and Dixon [L.]	40 0 0	—
100	Brown, John, and Co. [L.]	70 0 0	25 22½
5	Cakemore Colliery Co. [L.]	5 0 0	¼ dis. ¼
100	Cammell and Co. [L.]	80 0 0	4 5
20	Cannock and Huntington Coal [L.]	6 0 0	3 3¼
10	Cardiff & Swansea St. Coal Co. [L.]	9 0 0	2 2¼
10	Cardigan Steel and Wire Co. [L.]	8 10 0	1¼ 2
10	Central Swedish Iron and Steel [L.]	10 0 0	—
5	Chapel House Colliery	5 0 0	1
50	Charlton Iron Co. [L.]	50 0 0	2¼ 2
50	Chatterley Iron Co. [L.]	45 0 0	13 14
10	Chillington Iron Co. [L.]	10 0 0	24 22
1	Clee Hill Colliery Co. [L.]	1 0 0	7 6¼
10	Consett Iron Co. [L.]	7 10 0	—
1	Consett Spanish Ore [L.]	1 0 0	11 12
50	Cooke, William, and Co. [L.]	40 0 0	¼ dis.
20	Darlington Iron Co. [L.]	10 0 0	36 35
50	Davy Brothers [L.]	22 10 0	11 9
5	Diamond Fuel Co. [L.]	5 0 0	7¼ 8¼
22	Ebbw Vale Co. [L.]	29 0 0	¼ 1¼
100	Fox, Samuel, and Co. [L.]	80 0 0	23 20
10	General Mining Ass. [L.] (£1 returned)	9 0 0	31 33
20	Great Western Coal Co. [L.]	17 0 0	2 3
2	Gwyngwillim Colliery Co. [L.]	2 0 0	—
15	Hopkins, Gilkes, and Co. [L.]	11 0 0	—
50	Knowles, Andrew, and Sons [L.]	17 0 0	9¼ 9
10	Llay Hall Coal, Iron, & Firebrick [L.]	10 0 0	¾ 1
5	Littledean Woodside Coll. Co. [L.]	5 0 0	
50	Llynvi, Ogmore, & Tondu Co. [L.]	50 0 0	—
10	Lydney and Wigpool Iron Ore [L.]	8 5 0	6 8
10	Marbella Iron Ore Co. [L.]	10 0 0	10 9
6	Mersey Steel and Iron Co. [L.]	5 0 0	7¼ 6¼
10	Midland Iron Co. [L.]	5 0 0	10 9
5	Mold Argoed Colliery Co. [L.]	5 0 0	¾ 1¼
10	Monkland Iron and Coal Co. [L.]	10 0 0	—
4	Mwyndy Iron Ore [L.]	3 10 0	7¼ 7
100	Nant-y-Glo and Blaina (8 p.c. pref.)	100 0 0	1¼ 1¼
1	Nerbudda Coal and Iron	0 8 0	18 20
20	New Sharlston Collieries [L.] Pref.	20 0 0	¼ ¼
10	Newport Abercarn Coal Co. [L.]	10 0 0	18 17
10	Northmptn. Coal, Iron & Wagon [L.]	8 0 0	2¼ 3¼
10	Northfield Iron Co. [L.]	8 0 0	—
1	Norton Green Coal Co. [L.]	1 0 0	2¼ 2
35	Palmer's Shipbuilding and Iron [L.]	25 0 0	—
100	Parkgate Iron Co. [L.]	65 0 0	16 15¼
20	Patent Nut and Bolt Co. [L.]	14 0 0	4 2
20	Patent Shaft and Axletree [L.]	10 0 0	7¼ 7¼
20	Pelsall Coal and Iron [L.]	15 0 0	¼ dis.
50	Phœnix Bessemer Co. [L.]	40 0 0	12 10
50	Rhymney Iron Co. [L.]	50 0 0	—
10	Richards and Co. [L.]	10 0 0	21 22
100	Sandwell Park Colliery Co. [L.]	100 0 0	—
50	Ditto New	10 0 0	—
100	Shotts Iron Co. [L.]	100 0 0	15 17¼
100	Sheepbridge Iron and Coal [L.]	58 0 0	par 1
50	Silkstone & Dodworth Cl. & Iron [L.]	27 0 0	4 3¼
20	Skerne Ironworks [L.]	20 0 0	—
50	Somorrostro Iron Co. [L.]	50 0 0	13¼ 13
25	South Wales Coal Co. [L.]	21 0 0	—
100	Staveley Iron and Coal Co. [L.]	60 0 0	6¼ 7¼
100	Ditto ditto New	10 0 0	27 27¼
20	South Cleveland Ironworks [L.]	20 0 0	4¼ 5
10	Swansea Valley Steam Coll. Co. [L.]	6 0 0	—
100	Thames Iron Company	100 0 0	
50	Tredegar Iron and Coal Co. [L.]	20 0 0	—
25	Ditto B. shares	25 0 0	14 15
20	Ulverston Mining Co. [L.]	12 0 0	22 23
1	United Bituminous Collieries [L.]	1 0 0	1¼ 1¼
10	Vancouver Coal [L.]	6 0 0	—
100	Vickers, Sons, & Co. [L.]	100 0 0	½ dis ¼
50	Welsh Ironworks Co. [L.]	50 0 0	35 45
25	W. Cumberland I. and Steel [L.]	20 0 0	—
10	West Mostyn Coal [L.] (12 p.c. pref.)	5 0 0	11 10
5	West Swansea Colliery Co. [L.]	5 0 0	—
10	Whitehaven Iron Co. [L.]	10 0 0	—
100	Wigan and Whiston Coal Co. [L.]	70 0 0	—
100	Wigan Coal and Iron Co. [L.]	75 0 0	—

WAGON COMPANIES.

Shares.	Company.	Paid.	Prices.
10	Birmingham Wagon Co. [L.]	10 0 0	20½ 21
10	Ditto, 2nd issue	4 0 0	4¼ 4¼
10	Ditto, pref., 6 per cent.	10 0 0	12¾ 13¼
20	British Wagon Co. [L.]	10 0 0	1½ 1¾
10	Gloucester [L.]	10 0 0	12¾ 13¼
10	Ditto, 5th issue	5 0 0	1⅜ 1⅜
10	Met. Rail Car. and Wagon Co. [L.]	5 0 0	3¾ 4
5	Ditto, pref., 6 per cent.	5 0 0	6 6¾
50	Midland	50 0 0	—
20	North Central Wagon Co.	20 0 0	27¾ 27¾
5	Rail. Car. [L.] (Oldbury)	5 0 0	10 10¼
5	Ditto, pref., 6 per cent.	5 0 0	6 6¼
20	Sheffield Wagon Co. [L.]	15 0 0	3¼ 3¾
10	Yorkshire Wagon Co. [L.]	10 0 0	4¼ 5

TELEGRAPH COMPANIES.

Shares.	Company.	Paid.	Prices.
"St."	Anglo-American	100 0 0	59¼ 60¼
10	Brazilian Submarine	10 0 0	6¾ 6¾
20	Direct United States Cable	20 0 0	12½ 13¼
10	Eastern	10 0 0	7⅛ 7¼
10	East. Exten., Australia and China	10 0 0	7⅛ 7¼
10	Great Northern	10 0 0	7¼ 7¾
25	Indo-European	25 0 0	15 17
10	Mediterranean Extension	10 0 0	2¾ 3
8	Reuters	8 0 0	9 11
Stk.	Submarine	100 0 0	225 235
10	West India and Panama	10 0 0	3¼ 3¾
20	Western and Brazilian	20 0 0	5¾ 6¼
$1000	Western Union, 7 per cent. Mort. Bonds	$1000	106 108

MISCELLANEOUS.

Shares.	Company.	Paid.	Prices.
Stk.	Atlantic and Great Western Leased Lines, Rental Trust	100 0 0	37 40
25	Austral. Mort. Land and Finance [L.]	5 0 0	3¾ 4¼
25	Australian Agricultural	21 10 0	9 10
10	Avonside Engine [L.]	7 0 0	4 2
Stk.	Baltimore and Ohio, 6 per cent.	100 0 0	103¾ 104¾
10	Brighton Aquarium [L.]	10 0 0	13 18
Stk.	Cent. of New Jersey Con. Mort.	100 0 0	55 57
Stk.	Cent. Pacific of Calif., 1st Mort. 6 p.c.	100 0 0	106 107
25	City of London Real Property [L.]	12 0 0	1 1¼
25	Copper Miners of Eng. (7 p. c. pref.)	25 0 0	—
5	Diamond Rock Boring	4 10 0	1¼ 1¼
15	English and Foreign Credit	8 0 0	—
16	Fore Street Warehouse [L.]	14 0 0	12¾ 13¼
15	Foster, Porter, and Co. [L.]	10 10 0	10¾ 11¼
5	Gen. Phos. & Chem. Works Co. [L.]	5 0 0	—
1	Glaisdale Whinstone Quarry	1 0 0	—
1	Greenhill [L.]	1 0 0	—
17	Hudson's Bay Company	17 0 0	10¾ 11¼
10	Huntington Copper and Sul. Co.	9 0 0	8¼ 7¾
Stk.	Illinois Central, $100 shares	100 0 0	50 51
Stk.	Illinois & St. Louis Bridge, 1st Mort.	100 0 0	93 95
Stk.	Ditto, 2nd Mort., 7 per cent.	100 0 0	55 60
Stk.	Illinois Cent. Sinking Fund, 5 p. cent.	100 0 0	90 92
Stk.	Ditto, 6 per cent.	100 0 0	101 103
7½	Imperial Credit [L.]	7 10 0	7¼ 7¾
—	Ditto, Surplus Certificate	—	6 6¾
Stk.	Lehigh Val. Con. Mort., A, 6. p. cent.	100 0 0	94 96
10	Milner's Safe [L.]	10 0 0	9¼ 9¾
25	National Discount [L.]	5 0 0	9¾ 10¼
Stk.	N. Cent. Rail. Con. Mort., 6 per cent.	10 0 0	84 86
5	Patent Gunpowder Company	5 0 0	4¼ 4¾
10	Pawson and Co. [L.]	6 0 0	½ dis. ¼
50	Peninsular and Oriental Steam	50 0 0	38 40
Stk.	Pennsyl. Gen. Mort. 6 p. cent., 1910	100 0 0	105½ 106½
Stk.	Ditto, Con. Sink. Fund, 6 p. ct., 1905	100 0 0	94½ 96½
Stk.	Scottish Aust. Investment Company	100 0 0	180 190
Stk.	Ditto, 6 per cent. Preference	100 0 0	120 130
10	Silber Light (ord. sh.)	10 0 0	—
20	Suez Canal shares	20 0 0	—
12	Telegraph Construc. & Mainte. [L.]	12 0 0	27 28
5	Ditto, Second Bonus Three per Cents	5 0 0	2¾ 3¼
10	Tharsis Sulphur and Copper Co.	10 0 0	22½ 23¼
Stk.	Union Pacific Land Grant, 1st Mort.	100 0 0	99 101
Stk.	Union Pacific Railway, 1st Mort.	100 0 0	101 103

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